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Sony PS4 Pro
We go gaming in
4K and HDR, p20

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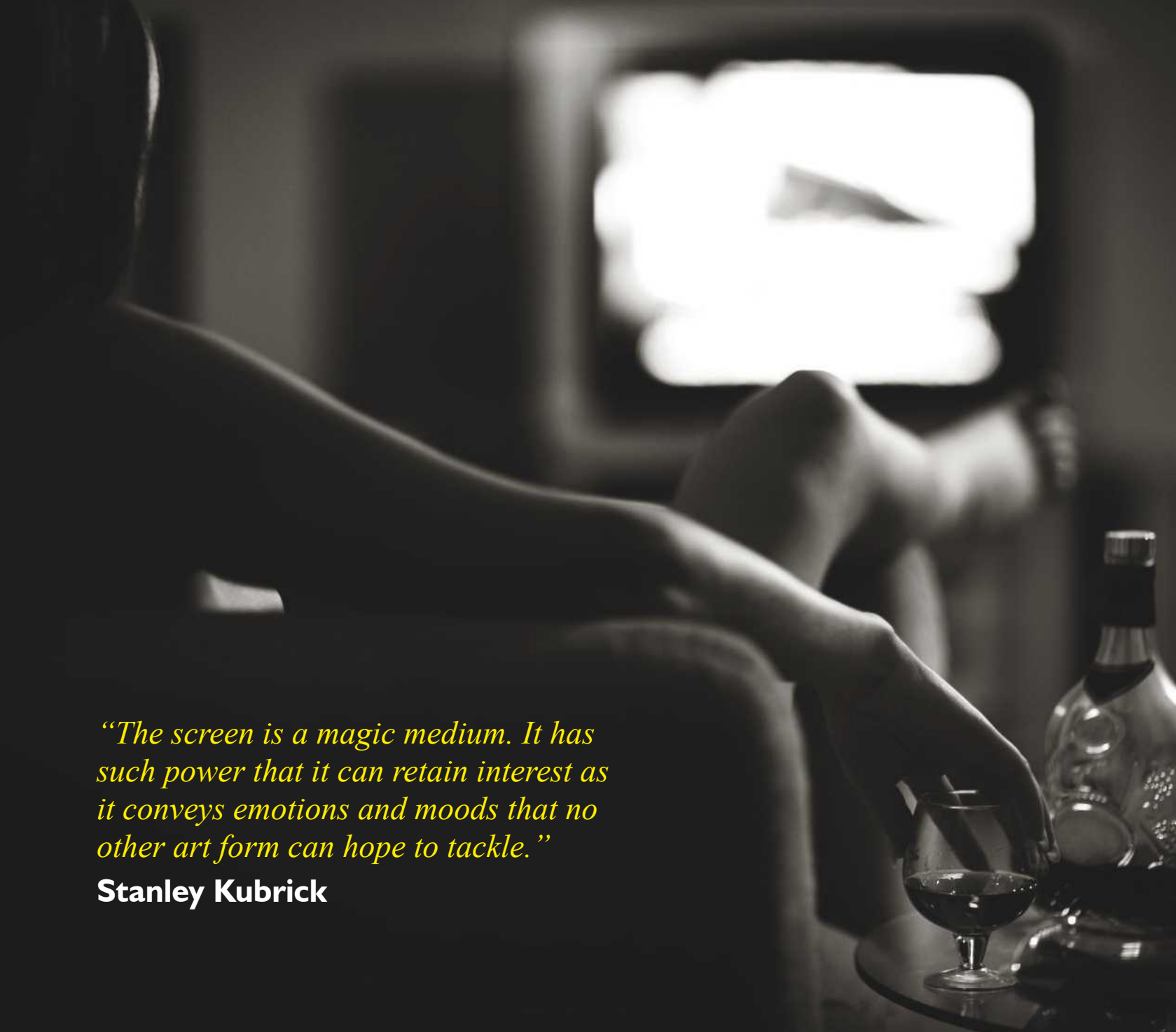
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ISSUE 268 JANUARY 2017 £4.99
AUS - \$13.50 NZ - \$14.99 CAN - \$17.00



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Stanley Kubrick

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EDITORIAL TEAM

Editor Mark Craven
mark.craven@homecinemachoice.com

Deputy Editor Anton van Beek
anton.vanbeek@homecinemachoice.com

Art Editor John Rook

CONTRIBUTORS

Steve May, John Archer, Tekura Maeva, Ed Selley, Jon Thompson, Danny Phillips, Rik Henderson, Martin Pipe, Martin Dew, Adrian Justins, Benny Har-Even, Richard Stevenson, Adam Rayner

Photography Mike Prior, Claire Collins

ADVERTISING

Advertising Sales Executive Sonia Smart

Tel: 07710 394391

E-mail: sonia.smart@hifinews.com

Advertising Sales Executive Simon Dunn

Tel: 01689 869853

E-mail: simon.dunn@hifichoice.co.uk

MARKETING AND SUBSCRIPTIONS

UK: New, Renewals and Enquiries

Tel: 0344 243 9023

E-mail: help@hcc.secureorder.co.uk

USA & CANADA:

Toll Free: 001 866 647 9191

REST OF WORLD: New, Renewals and Enquiries

Tel: +44 (0) 1604 828 748

BACK ISSUES

www.mags-uk.com

MANAGEMENT TEAM

Group Editor Paul Miller, paul.miller@avtechmedia.co.uk

Group Sales Manager Rhona Bolger

Subscriptions Manager Kate Hall

Chief Executive Owen Davies

Chairman Peter Harkness

Published by AVTech Media Ltd

Suite 25, Eden House, Enterprise Way

Edenbridge, Kent, TN8 6HF

Tel: 0844 412 2262

From outside the UK: +44 (0) 1689 869 840

Distributed in the UK by Seymour Distribution Ltd

BACKGROUND WALL IMAGES:

©SHUTTERSTOCK.COM

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Home Cinema Choice, ISSN 1359-6276, is published monthly with an additional issue in May by AVTech Media Ltd, a division of MYTMMEDIA Ltd, Suite 25, Eden House, Enterprise Way, Edenbridge, Kent, TN8 6HF, UK. The US annual subscription price is £68GBP (equivalent to approximately \$98USD). Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11431. US Postmaster: Send address changes to Home Cinema Choice, Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Subscription records are maintained at CDS GLOBAL Ltd, Tower House, Sovereign Park, Market Harborough, Leicestershire LE16 9EP. Air Business Ltd is acting as our mailing agent.



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NEXT ISSUE ON SALE: January 19, 2017



Star Wars grabs a gong in our annual Movie Awards, p25

Welcome

Once again we're bringing an end to the year with a special issue looking back at the hardware and software that blew us away over the past twelve months. Our reviews section (beginning on p37) covers **everything from 4K screens and players to amps, projectors, speakers, soundbars and more**, while our Movie Awards (p25) has a software slant.



2016 will go down in AV history as the year that 4K moved from minor curiosity to mainstream tech. And next year will see more developments, more displays, more players and more movies. Things will get better for telly addicts, too, with Virgin Media's new TiVo box letting you record six channels while watching a seventh. Of course, this raises the question of whether there's ever seven things worth watching being broadcast simultaneously... Personally, I doubt it, but if the tech exists to make it possible, bring it on!

Mark Craven
Editor



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CONTRIBUTORS



John Archer:
The UK's most experienced TV tester cut his teeth as an early HCC staffer



Jon Thompson:
Film producer and post-production expert delves deep into Hollywood and AV



Steve May:
HCC's former Editor-in-Chief is one of the UK's most respected AV journo



Martin Pipe:
Technical expert Martin is renowned throughout the home cinema industry



Richard Stevenson:
Industry veteran and former Editor of UK CE trade journal ERT



Adrian Justins:
Made his name as the editor of *What Video & TV* and *What Home Cinema*

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Make room for these 10 space invader
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Danny Phillips, Home Cinema Choice, June 2016



DALI SUB K-14 F



DALI OPTICON 2



DALI OPTICON 6



DALI OPTICON VOKAL

BULLETIN

→ **News Highlights** TEUFEL Theatre 500 floorstanders enjoy a dramatic overhaul **SAMSUNG** South Korean giant acquires Harman International **HYBRID LOG GAMMA** HDR format gets DVB approval **YOUVIEW** TV service reboots **PLAYLIST** What's screening at HCC towers **THE MAGNIFICENT SEVEN** Western remake saddles up on 4K Blu **& MORE!**

Finger on the Pulse

Bluesound Pulse Soundbar → www.bluesound.com



The latest addition to Bluesound's multiroom range, the £1,000 Pulse Soundbar uses a six-strong driver array (arranged in a stereo configuration), plus two additional passive radiators, and was 'voiced' at Canada's National Research Council by speaker engineer Paul Barton. However, the real standout feature for audiophiles is the inclusion of Wi-Fi and Gigabit Ethernet alongside the ubiquitous aptX Bluetooth, allowing the 'bar to offer hi-res audio streaming (to 24-bit/192kHz) and playback of MQA (Master Quality Authenticated) files.

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Dramatis personae

Teufel Theatre Series → www.teufelaudio.co.uk

Teufel has overhauled its Theatre 500 speaker. Now in its third incarnation, the redesigned tower (£600/pr) uses two 6.5in Kevlar woofers, plus a 6.5in midrange driver and time-aligned tweeter in a three-way array, and is down-ported for 'anywhere' room placement. A complete Theatre 500 5.1 system (pictured) is also available, priced around £1,350, which adds a pair of dipole surrounds, centre speaker and 12in subwoofer. Bookshelf Theatre speakers are also an option.



McIntosh updates AV processor



While McIntosh's smart-looking, high-end MX122 AV Processor offered Dolby Atmos out

of the box when it was released earlier this year, support for other 3D audio formats was lacking. Thankfully, that has all changed with a free firmware update that adds compatibility with DTS:X and Auro-3D to McIntosh's AV behemoth, as well as other unspecified 'minor improvements'. The McIntosh MX122 is distributed in the UK by Jordan Acoustics, priced around £7,000. www.jordanacoustics.co.uk



Innovative 'bar offers EQ tool

British loudspeaker brand Q Acoustics has added a new £300 soundbar to its product portfolio. The M3 is the first of its 'bars to employ the company's MovieEQ functionality, which lets you switch between two pre-determined equaliser settings; one designed for standard TV viewing, the other a more bass-rich option for movies. The streamlined soundbar packs two wide-dispersion 2.25in BMR drivers and a built-in elliptical woofer. Connections include HDMI (with ARC) and aptX Bluetooth. www.qacoustics.co.uk

YouView enters the cloud

Next-gen TV platform gets a major facelift and debuts new features

YouView is evolving. The UK's first over-the-air/internet-delivered television service is moving to 'the cloud' and will be introducing a raft of new features in the process.

'We approached this with a "leave no box behind" mentality,' Richard Halton, YouView CEO, told *HCC*. 'So regardless if your box is one of the original 2012 Humax models or a 4K BT UHD box, you'll get Next Generation YouView. We'll be bringing the update to 2.5 million YouView homes.'

Currently the only exception to this huge roll-out looks likely to be the YouView app on Sony TVs. 'We're talking to Sony about how we refresh their TVs. They're on a different development cycle. We're going to talk to them about their appetite for this.'

New look, new features

YouView v2.0 also opens the door to multiplatform viewing, with users able to watch their recordings while on the move. The clever bit is that programmes actually stream from cloud servers rather than your PVR. TalkTalk and BT subscribers will also be able to programme their set-top boxes via smartphones.



Nick Thexton: 'Next Gen is best thought of as a way of improving the navigation and discovery process'

There's also a new interface rendered in HTML 5 rather than Adobe Flash. The switch enables a number of visual refinements, such as transparencies and animations, while the use of HTML 5 also promises to make it easier for third-party developers to produce apps for the service.

The YouView boss adds that a shift to a cloud-based architecture means that it can deliver system updates faster and with more regularity.

Visually, the biggest change to the UI is the amount of imagery on show. There are thumbnails for recordings and recommendations. A new Mini Guide, which runs across the bottom of the screen, allows viewers to toggle between an On Now TV guide, apps and MyTV (the new name for the recordings library). A Watchlist feature lets viewers build a list of shows they're interested in.

'Next Gen is best thought of as a way of improving the navigation and discovery process,' suggests CTO Nick Thexton. 'You can do crazy things in YouView that other platforms don't do. Content interweaving is unique.' As an example, look for *Planet Earth 2* and results not only pull up the show from iPlayer, but programmes of interest, such as a Graham Norton episode on which David Attenborough guests to promote the series.

Thexton hinted to *HCC* that Next Gen YouView will also run on low-cost Mini devices. 'There's lots of interesting opportunities going forward.'

But there aren't any plans for a retail YouView 4K STB. 'It's down to our partners,' explains Thexton. 'They would need to be convinced.'

The redesigned user interface is rolling out to YouView hardware

Playlist...

Team *HCC* spins up its disc picks of the month

Star Trek Beyond 3D (All-region BD)

Sensational stereoscopic visuals and an immersive Atmos soundtrack make sure this sci-fi three-quel lives long and prospers on 3D Blu-ray.



Batman: Return of the Caped Crusaders (All-region BD)



Holy nostalgia Bat-fans! They've only reunited Adam West, Burt Ward and Julie Newmar for this 'toon based on the '60s TV series!

The Fall: Series Three (Region B BD)



The BBC's acclaimed crime series comes to a dramatic close on this classy two-disc Blu-ray release.

River of Death (Region B BD)



There's plenty of pulpy enjoyment to be had with this 1989 action-adventure featuring the recently departed Robert Vaughn.

Bones: Season Eleven (R2 DVD)



Fox's quirky crime show gets even odder thanks to a crossover with supernatural series *Sleepy Hollow*!

At the 'plex...

Heading out to see a flick?
Catch these this month

Assassin's Creed



January 01: Michael Fassbender is reunited with his *Macbeth* co-star Marion Cotillard and director Justin Kurzel for this adaptation of the hit game series. Expect plenty of stealthy stabbing and leaping off tall buildings into carts of hay.

Underworld: Blood Wars



January 13: Kate Beckinsale steps back into her leather catsuit for this fifth outing in the action-horror franchise that pits vampires against werewolves. Here's hoping it doesn't suck.

xXx: The Return of Xander Cage

January 20: Following a gap of 15 years(!) everybody's favourite extreme sportsman-turned-secret agent returns to the silver screen. And this time around Vin Diesel is joined by martial arts legends Donnie Yen and Tony Jaa.

Samsung buys Harman

Korean giant acquires US audio innovator in huge \$8billion deal

Samsung Electronics has agreed to buy out Harman International Industries in a mega-deal that should help the Korean firm expand into the lucrative automotive tech market. However, as Harman is also the parent corp for renowned AV brands including Mark Levinson, JBL, Harman/Kardon, AKG, Infinity and Revel, it should have a knock-on effect in other areas, too.

'The transaction will immediately give Samsung a significant presence in the large and rapidly growing market for connected technologies, particularly automotive electronics, which is expected to grow to more than \$100billion by 2025,' said Harman when confirming the deal. Approximately 65 per cent of Harman's 2015-2016 sales were 'automotive-related.'

'Harman perfectly complements Samsung in terms of technologies, products and solutions,' explains Oh-Hyun Kwon, Vice Chairman and Chief Executive Officer of Samsung Electronics. 'As a Tier 1 automotive supplier with deep customer relationships, leading technology and a recognised portfolio of best-in-class products, Harman establishes a strong foundation for Samsung to grow our automotive platform.'

Buy one, get plenty

While the focus of the announcement was on the connected in-car market, the buy-out will mean that Samsung becomes the owner of Harman's audio brands. The good news for AV-Holics is that these are to be maintained as standalone subsidiaries. Even better, perhaps, is that Samsung will be able to call upon Harman's R&D and engineering expertise (the company claims it has



Harman's expertise includes home AV and automotive tech



15,000 employees globally in these areas) to improve the performance across its home cinema line of 4K TVs, soundbars and multiroom speakers.

'All of these brands will greatly enhance the competitiveness of Samsung's mobile, display, VR and wearable products,' announced Harman.

Any new-look products resulting from the deal are surely a long way off. The transaction is first subject to approval by shareholders and regulatory oversight, and is suggested to 'close' in Summer 2017. However, an obvious possibility would be Harman-powered speakers residing in Samsung's flatscreen TVs – LG, Samsung's biggest rival, currently features Harman/Kardon sound systems in its OLED and LED sets.

Perhaps the most shocking aspect of this story is that 'Samsung expects to use cash on hand to fund the transaction,' which has left *HCC* wondering exactly how long it would take to count \$8bn...

Virgin TV revs up V6 for 2017

Virgin Media unveils new Ultra HD TiVo box, plus a tablet made for telly addicts

Virgin Media is getting ready to take the fight to the Sky Q 4K set-top box, with a new Virgin TV V6 PVR scheduled for release in January that is apparently the brand's 'smallest, smartest and fastest' TiVo box yet and is '4K-ready.'

The multi-tuner PVR has a 1TB hard drive and can to record up to six programmes at once, while playing a seventh recording or streaming content. Recordings can also be shared to other TiVo boxes around the home.

Netflix and YouTube apps will support 4K from launch. The company says more Ultra HD programming is 'coming soon'. A future update will

also unlock the V6's HDR potential.

Pricing for new Virgin Media customers is £100, although new/existing subscribers with a Full House or VIP bundle will be offered a special discount price of just £50.

Also in-bound is the Virgin TV TellyTablet. Priced £300, this binge-watch-friendly Android tablet features a 14in HD screen, four speakers and 32GB of memory (expandable via SD card). www.virginmedia.com



Virgin Media claims the V6 boasts '10 times the power' of any previous TiVo set-top box



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"Within 10 seconds of letting rip with a choice cut from John Wick, the S/3 SHO was delivering big LF effects. Yet sheer grunt and heft is not the S/3's trump card. What I really noticed, particularly in comparison with my usual 18in-driver Velodyne, was the tautness and impact of its output. For typical mid-sized UK cinema/ living rooms, REL may have hit on pretty much the perfect-sized sub."

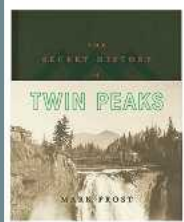
Richard Stevenson, Home Cinema Choice

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Extras...

Small items that could make a big impression...

The Secret History of Twin Peaks



Presented as a secret dossier, this damn fine hardback (£20) by *Twin Peaks* co-creator

Mark Frost uses journal extracts, classified reports and newspaper clippings to chart the history of the mysterious Pacific Northwest town from the Lewis and Clark expedition up to the immediate aftermath of the original TV run – all annotated by an investigating FBI agent. Just what you need to get you in the mood for the new TV series coming in 2017.

Batman: A Celebration of the Classic TV Series



This typically gorgeous £35 coffee table tome from Titan serves up a suitably eye-popping

and vibrant account of the making of the iconic 1960s *Batman* TV series. Laden with interviews with the cast and crew, plus rare photos, it's a must-read for Bat-fans and might well stand as the definitive history of the beloved superhero show.

The Mysterious World of Doctor Strange



Another Marvel Studios superhero movie, another DK book devoted

to the character's comic book adventures. Following the same format as its predecessors, this nicely illustrated hardback will set you back £18, and works as an enjoyable and instructive primer to the character, his adversaries and his noteworthy exploits.



Broadcast HDR looms

Hybrid Log-Gamma becomes part of the DVB's UHD Phase 2 spec

Broadcast HDR has taken a step nearer reality after the DVB approved Hybrid Log-Gamma as part of the technical specification for UHD Phase 2, in line with the ITU proposal for BT.2100.

The DVB Technical Module committee has now accepted two solutions for broadcast HDR: Hybrid Log-Gamma (HLG) and the more familiar PQ (Perceptual Quantizer, aka ST2084, which underpins HDR 10). HLG is thought likely to be adopted by UK broadcasters and service providers such as the BBC, Sky, Virgin Media and BT, all of whom work within DVB guidelines.

The Phase 2 specification also rubber-stamps High Frame Rate (HFR) broadcasting, twice that of the current 50/60Hz standard, and supports Next Generation Audio (NGA) in the shape of object-based or scene-based sonics. BT has confirmed that it will introduce Dolby Atmos on its live UHD sports coverage in early 2017.

Technical advantages

Hybrid Log-Gamma has been developed by the BBC and Japanese state broadcaster NHK, and sets out to resolve the problem of making UHD HDR TV services backwards-compatible with regular HD TVs. Without compatibility they would need to simulcast channels or programmes, which has obvious cost implications. It allows an existing production ecosystem for SDR TV to be used for HDR production.

HDR 10 has become the *de facto* standard for pre-produced content, used on UHD Blu-ray and by streaming platforms. Dolby Vision uses frame-by-frame metadata for greater accuracy, but its roll-out is limited to LG screens and Netflix. However, both these HDR flavours rely on end-to-end metadata, which doesn't work for TV

transmissions – particularly live broadcasts. HLG has no such metadata complications, as it's a 'scene-referred' system. The delivered signal reflects the light in the original scene, as shot. Broadcasters simply(!) need to deliver a Hybrid Log-Gamma curve to a compatible display. A flag tells the receiving display that there's HLG UHD coming over HDMI with 10-bit colour-depth.

HLG can also alter the HDR image based on the viewing environment – light room/dark room, or a nit-specific brightness level.

TV brands stay quiet

So is the HDR TV that you buy today going to be upgradable to Hybrid Log-Gamma HDR tomorrow? We asked the leading TV manufacturers about the possibility of firmware updates, and their responses were perhaps tellingly noncommittal.

Only Samsung [pictured top] was unequivocal, telling us that, 'All of Samsung's 2016 HDR TVs will be firmware upgradable to support Hybrid Log-Gamma broadcast HDR once it is widely available.'

'Once the standard is confirmed, we will comment then...' was Sony's curious response. However, the brand's projector division says its new

VPL-VW550ES HDR 4K home cinema projector *will* be firmware upgradable to HLG at some point.

Philips, meanwhile, would only say, 'the implementation of HLG HDR for our TVs is currently under investigation.'

While LG has led the industry in terms of demos of HLG at trade events and consumer shows like IFA, it too declined to make any official comment. Panasonic was similarly keeping mum.

Expect brands to become rather more enthusiastic about Hybrid Log-Gamma compatibility when new ranges are announced in 2017.

Will today's HDR TVs support HLG?





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Face to Face

Topics of discussion on the HCC Facebook page

Disney's Big Sleeve Blu-ray editions...



They seem rather pointless to me.
Barrie Head

They do look nice and it would be like collecting vinyl. However, it's the storage issues – not exactly living-room friendly are they?
Fondriest Steve

Already have steelbook versions where applicable. Not going to double dip for the same version. UHD versions of the film might make me double dip, but only if it was a significant improvement over the Blu-ray I already own.
Chris Sayles

What you're watching on your home cinema...



Zombi 4K remaster.
The Rocketeer. Suicide Squad extended cut.
Mike Wadkin

It Came From Outer Space 3D, Fantastic Voyage and Voyage to the Bottom of the Sea! Retro and stunning restorations I hope.
Stefano Pascuzzi

I just got all four *Underworld* movies on Blu-ray – I'll see how I get on with that.
Callum Mckenzie

Book of Eli this weekend.
Gary Ward

Gonna be watching *Deliverance* and *Southern Comfort*, 'cos the missus has never seen them.
Brett Gidlow



The Legend of Tarzan UHD. Mmm... Movie not great, but Atmos up there with the best I've heard. Once again though, UHD and HDR a little underwhelming.
Jonny Roman

Join in the fun



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Back of the 'net

Trailers, technology and more to check out on the web



Stop-motion masters

Now hitting Blu-ray (see p105), animation *Kubo and the Two Strings* showcases the remarkable talents of next-gen stop-motion studio Laika. This promo featurette from Dolby gives you a peek at the production process, and an insight into the merits of the theatrical Dolby Vision format.

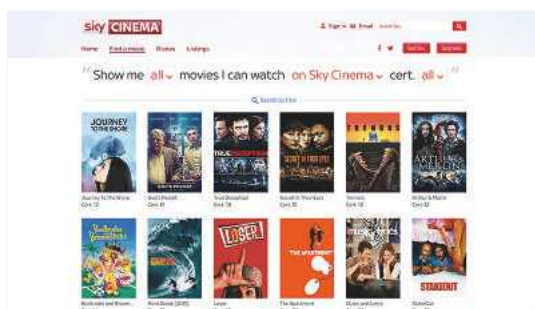
youtu.be/ffAjndmyUJgs



Disney's big idea

Although these will play havoc with the neatness of your Blu-ray collection, Disney's new Big Sleeve editions (see left) have immediate appeal for those crying over the demise of LaserDisc. BD releases with 12in sleeves, the line currently includes *Guardians of the Galaxy* and *Star Wars: The Force Awakens*.

<http://disney.co.uk/big-sleeve>



A guide for your Sky guide

Satcaster Sky has cooked up a neat website letting film fans search for title availability across both its satellite channels and on-demand Sky Store, also breaking down what's coming soon, and incorporating theatrical releases too. Could be useful if you're stuck for something to watch.
www.sky.com/tv/channel/skycinema



Fifth time's a charm

The debut trailer for 2017's *Transformers: The Last Knight* has landed with an almighty metallic thud. Featuring a moody score, a portentous narration by Sir Anthony Hopkins and sequences of 'bots roaming medieval Earth, it's certainly got our juices flowing. Shame we have to wait until Summer!

youtu.be/v-4rYf0x-F4

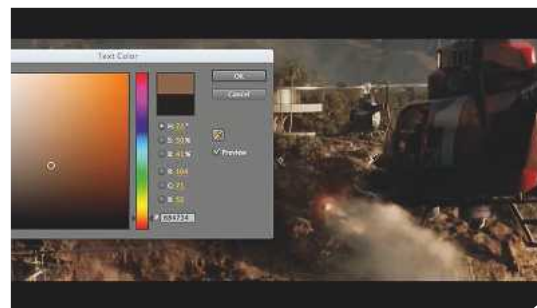


TOP PICK

A family affair

Due for release in June, *The Mummy* (starring Tom Cruise and heaps of SFX) is the first film in what Universal Pictures hopes will be a multi-part franchise crammed full of its other classic monsters (Wolf Man, The Invisible Man, etc.). Check out the trailer to see why we're excited.

youtu.be/Mn_QCUxWPYQ



Fifty shades of Marvel

Should comic book movies replicate the visual style of their source material? That's the question posed by this visual essay analysing the colour grading employed by Marvel Studios across its 14-film (and counting) franchise. Does *Captain America: Civil War* look 'flat and dull'? We're not so sure...
youtu.be/hpWYtXtmEFQ

Quadral's Titanic towers

Quadral Aurum 9 → www.r9volution.com/en
→ www.nunudistribution.co.uk



Quadral's high-end Aurum 9 speakers are coming to the UK, and we've got our eye on the Titan towers. Here, the brand's quSENSE ribbon tweeter is flanked by mid-range units, above a pair of woofers set back in the baffle within a pressure chamber. On the rear are low-, mid- and high-frequency level controls to tailor the Titan's sound to your taste. Pricing ranges between £14,000-£16,000 (pair) depending on finish; the Aurum range also includes centre, sub, standmount and smaller floorstanding models.



Magnificent 4K?

The Magnificent Seven → Sony Pictures → DVD, Blu-ray, UHD Blu-ray



Denzel Washington and Chris Pratt are among the Hollywood stars rounded up for this remake of the iconic 1960 Western of the same name (itself a remake of Akira Kurosawa's *The Seven Samurai*). Riding into town all guns blazing on January 23, *The Magnificent Seven*'s Blu-ray promises a DTS-HD MA 7.1 soundtrack, plus an exclusive 'Vengeance Mode' in which director Antoine Fuqua joins the cast to break down key scenes. Meanwhile, the 4K Blu-ray gives the film a rootin'-tootin' Dolby Atmos audio upgrade.





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2



PlayStation's mid-cycle 4K refresh is a brilliant conundrum for gamers, says **Steve May**

HDR and 4K for joypad junkies

The PS4 Pro is a bit of an odd duck. It's the first PlayStation console that's effectively a mid-cycle upgrade. Traditionally, gaming generations follow each other in an orderly line, each new iteration in some way distinct from its predecessor. Sometimes there's backwards compatibility, other times not. The PS4 Pro is different. It represents a hardware upgrade, yet it's very much a PS4.

The situation is akin to the automotive market. Do you want a BMW 7 Series 740i or the hybrid with all the extras? Same car, different ride.

This face-lift was inevitable. The timing for the original PS4 couldn't have been worse. It launched pre-4K and HEVC, when HDMI 2.0 boards were barely out of the science lab. For a next-gen console it was very much locked to the HD era. Not that this was ever going to slow it down commercially.

With the Pro CUH-7000, to give it its official product code, (nearly) everything gets an upgrade. The console can now offer 4K streaming services and has the horsepower to run games natively in 4K (with caveats), with HDR. What was once the preserve of the high-end PC gamer is now available to joypad jockeys at an everyday price point.

Perhaps the most contentious aspect of the PS4 Pro is its disc drive. Only those who have been living in a cave will be unaware that this won't play UHD Blu-ray, sticking with regular BD instead. The company cites philosophical reasons, but I'm not buying that. Whatever the reason for its omission, for the fledgling 4K format, Sony's frugality was undoubtedly a disaster. Millions of owners who could have had access to the new UHD format were written off.

Personally, I'm sanguine about the decision, though. Aside for sheer convenience, I'd never advocate using a games console for movie playback anyway. The user experience, particularly given the fact that the PS4 Pro doesn't have a 'real' remote control like the PS3, is dire.

Triple-deck delight

Style-wise, the PS4 Pro adopts a three-tier design that builds upon that employed for the PS4 Slim. It's some way removed from the original console, and not as bulky as you might imagine. Thankfully, the gloss lid has been abandoned. Not only was that a fingerprint magnet, any

attempt to clean it resulted in swirls of micro scratches. It looked bad, really fast. The Pro is matt black with rounded edges. Far more practical.

Connections include an HDMI v2.0a output, optical digital audio, USB and Ethernet. The console also supports dual-band Wi-Fi and Bluetooth. There are additional USB ports to the front for controller connection. We also get tiny Power and Eject buttons on the front ribs. The latter is a little flimsy and requires a concerted press.

Beneath the bonnet there's an x86-64 AMD Jaguar CPU with 8 cores clocked at 2.1GHz (up from 1.6GHz on the base PS4), coupled to an AMD Radeon GPU capable of 4.20 TFLOPS, effectively twice that of the original console. There's also 8GB of fast GDDR5 RAM.

The 2.5in hard disk drive is 1TB, which in context is actually rather small. It won't take too many game installs to fill this up. In the past in *HCC* I've advised owners of the original PS4 to upgrade their 500GB drives to 2TB and that advice holds true here, although obviously the cost/benefit ratio is worse.

There have been numerous reports of connection issues 'twixt the PS4 Pro and HDR TVs of various denomination. The vast majority of these can be attributed to basic (but understandable) setup errors, amplified by the inconsistent and confusing implementation of HDR across TV brands. We saw similar grief when 4K UHD Blu-ray players launched. There are also some genuine anomalies, many of which should have been resolved with firmware revisions before you read this.

I can only report from experience – I had no such connections issues. Everything worked as it should, with both 4K HDR and UHD SDR screens. No drama here, move along.

The video output settings on the PS4 Pro comprise Automatic, 720p (and lower), plus 2160p YUV420 and

AV INFO

PRODUCT:
4K/HDR-capable games console

POSITION:
Top iteration of the PlayStation 4

PEERS:
Xbox One S;
Nintendo Wii U

1. The new console is slimmer than the original, and has a matt black finish

2. 'Enhanced' game titles make use of the PS4 Pro's turbo-charged powers

2160p RGB colour formats. If your display isn't compatible with one of the latter, it'll be greyed out. Ideally, leave the thing on Automatic.

Once set up, the PlayStation user experience is largely unchanged, however the PS4 Pro interface – what you see when you hit the PS button – is rendered at 4K rather than 1080p. Nice.

App store and overall usability are reassuringly familiar, only here the Netflix app supports UHD. Netflix remains in system memory even when you're playing a game, so it's quick to switch between the two. Amazon Video is currently HD only (although this may well change).

Operationally, the new console runs at pretty much the same noise level as the original CUH-1000 model, the fan spinning up and down depending on how much work the console is having to do.

The changing world of gaming

The real fun begins when you start playing games. If you thought pedantic debates about the nature of film assets for UHD Blu-ray movies were confusing, you ain't seen nothing yet. How developers and studios use the extra power available is entirely up to them. From super-sampling to multiple scaling options, the PS4 Pro is a moving feast.

The first wave of games to be 'Pro enhanced' are mainly older titles, and tell us little about the true power of the console. *Ratchet and Clank*, for example, boasts improved anti-aliasing. Background detail is wonderfully smooth; fine details are super-crisp (the definition on Clank, as he's carried on the back of Ratchet, is extraordinary). A layer of HDR brings additional luminance. Don't tell me its HDR images look more realistic, though. This is a platform game with cartoon characters – there is no reality.

Meanwhile, the Pro version of *Lord of The Rings: Shadow of Mordor* has fluctuating resolution, but renders at more or less native 4K most of the time. It looks superb.

Of course the turbo-charged graphics engine isn't just about 4K. Being able to run games at 1,080p at 60 frames per second still represents a big jump over the original PS4 and Xbox One. This begs the question, is a 1080p/60 gaming experience better than a 4K/30 one? This will be a matter of personal taste, and the game itself. It's always worth looking in the Display options of whatever title you're spinning, because display options vary, and be aware that developers are consistently repatching software to muck around with how they play.

We won't actually know the true potential of the PS4 Pro for some time. When the big AAA titles begin to land in 2017 offering better resolution and faster frame rates

SPECIFICATIONS

HARD DRIVE: 1TB **MEMORY:** 8GB GDDR5 RAM **GPU:** 4.20 TFLOPS, AMD Radeon™ based graphics engine **CPU:** x86-64 AMD 'Jaguar', eight cores **CONNECTIONS:** HDMI v2.0a; 3 x USB (3.1); Ethernet; digital optical audio output **DIMENSIONS:** 295(w) x 55(h) x 327(d)mm **WEIGHT:** 3.3kg

FEATURES: Built-in dual-band Wi-Fi; Blu-ray/DVD playback; Netflix 4K, Amazon Video and other streaming service support; PSN network support; PS VR compatible; Bluetooth 4.0; High Dynamic Range support; DualShock 4 controller

PARTNER WITH



SONY KD-65ZD9: Run the PS4 Pro through Sony's flagship TV and you won't want to leave the house. The 65in iteration sells for around £4,000, and uses a direct LED backlight for precise HDR thrills. See our review on p38 for more.

(*Horizon Zero Dawn* and *Death Stranding* are currently whetting our whistle, along with the PS4 *Spider-Man* title), we'll get to learn more about the PS4 Pro's picture prowess. But what we've seen so far is hugely exciting.

Forward-thinking

The PS4 Pro may be part reboot and part refresh, but there's little doubt that it's the most advanced games console you can buy right now. For those yet to jump onboard the Sony bandwagon, it's unquestionably a winner. Priced at £350 (give or take bundling deals), it's hard to ignore.

But if you already own a PS4, or haven't yet upgraded your TV, there's obviously less incentive. And even if you have, every PS4 now supports HDR anyway thanks to a recent firmware update.

The temptation for many will be to wait and see just how far developers can push the platform in 2017. By which time, the 4K Xbox Project Scorpio console, due late 2017, comes into the mix. When it comes to gaming, it's probably all to play for over the next twelve months ■

HCC VERDICT



Sony PlayStation 4 Pro

→ £350 → www.sony.co.uk

WE SAY: This 4K refresh of the PS4 Pro is a powerhouse gaming platform with real potential – we're even prepared to forgive it for snubbing UHD Blu-ray.



3. A revised DualShock controller, although the original PS4 joystick is compatible

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WHO WINS? TURN THE PAGE...



Label of the Year

Winner

BRITISH FILM INSTITUTE

The BFI has enjoyed a banner year in 2016, gracing film fans with some of the most important and unexpected Blu-rays to ever see the light of day.

Spanning the entire history of cinema from the silent era (*Napoleon*) to more recent world cinema gems (*Underground*), by way of banned television dramas (*Culloden & The War Game*), teen hits from the Swinging Sixties (*Expresso Bongo*) and cult shockers (*Psychomania*), the BFI's lineup has had something for everyone. And in each case the label has invested time and effort in delivering the best possible HD package, whether that means

creating new restorations or sourcing a fascinating array of supporting features (both archival and newly-produced).

There are other labels putting out discs with flashier AV credentials, for sure. Yet none have offered a Blu-ray slate as exciting, eclectic and expertly-curated as that of the BFI. Bravo.

Also Nominated

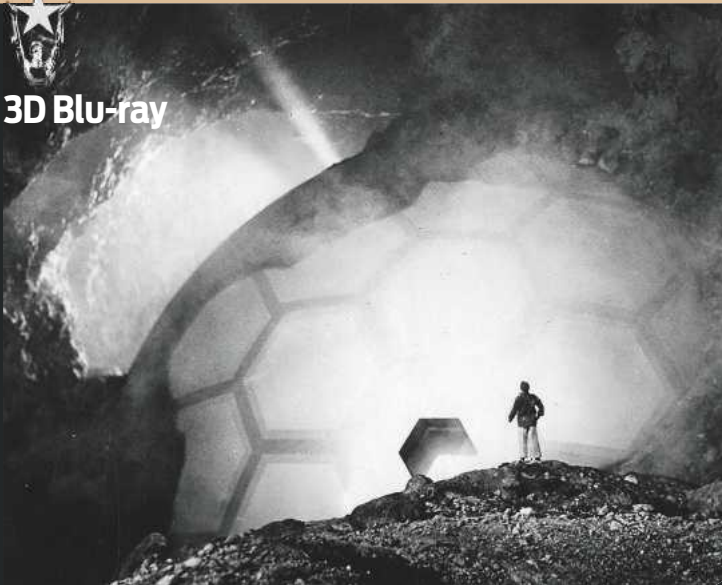
Arrow Video/Academy
Indicator/Powerhouse Films
Universal Pictures



From football hooligans to silent Shakespeare, the BFI's 2016 BD lineup has covered plenty of ground



3D Blu-ray



Winner

IT CAME FROM OUTER SPACE 3D

A key title in the development of the science-fiction genre and stereoscopic cinema, this 1953 classic finds director Jack Arnold exploring the creative and dramatic possibilities afforded by 3D visuals to exciting effect. Restored to its original stereoscopic glory under the guidance of Bob Furmanek and the team at the 3-D Archive, *It Came from Outer Space* looks stunning on Blu-ray; the 3D image demonstrating an

immersive sense of depth with no trace of any alignment issues. With the other Hollywood majors having fallen behind when it comes to vintage 3D films on Blu-ray, kudos to Universal Pictures for showing what can be done.

Also Nominated

The Walk 3D
In the Heart of the Sea 3D
Jaws 3D
Star Trek Beyond 3D



Remaster



Winner

NAPOLEON

As restoration projects go, the effort undertaken to reconstruct the full version of Abel Gance's 1927 silent masterpiece is simply unparalleled. Spearheaded by film historian Kevin Brownlow, the project took decades to complete and – following a brand-new digital clean-up – has now made the jump to Blu-ray. The resulting hi-def presentation is spectacular and joined by some truly boundary-pushing features (see p110 for more).

Also Nominated

Deep Red: 3-Disc Limited Edition
Dissent & Disorder: Alan Clarke at the BBC (1969-1989)
Body Double
Labyrinth: 30th Anniversary Edition



DVD Exclusive



Winner

THE WONDER YEARS: THE COMPLETE SERIES – DELUXE EDITION

This mammoth boxset is a dream come true for fans of the celebrated late '80s sitcom. Spreading its sympathetic 4:3 transfers of all 115 episodes of the show across 26 platters, it also finds room for some 23 hours of bonus bits (including interviews, home movies and outtakes). However, what makes this UK DVD boxset particularly wonderful is that it is the first release anywhere to include all of the iconic music from the original broadcasts.

Also Nominated

Respectable: The Mary Millington Story
Night of the Living Deb
Creature Designers: The Frankenstein Complex



Audio Quality



Winner

BATMAN V SUPERMAN: DAWN OF JUSTICE – ULTIMATE ED.

The long-awaited bigscreen match-up between the two comic book superheroes was never likely to be a quiet, perfunctory affair in terms of sound design. Carrying the same Dolby Atmos mix across both its Blu-ray and Ultra HD Blu-ray releases, *Batman v Superman: Dawn of Justice*'s sonics soar just as high – and are just as powerful – as the Man of Steel himself.

Right from the off the Atmos track makes its presence felt with a broad dynamic range and room-rattling LFE, ably supported by convincing use of the height layer to make the mayhem seem

that much more expansive. Meanwhile, the super-powered fight scenes reverberate with blows that sound like they really do hurt.

Throw in the excellent handling of Hans Zimmer and Junkie XL's brooding score and you have a superheroic treat for audio junkies.

Also Nominated

Everest
Sicario
Star Wars: The Force Awakens
X-Men: Apocalypse



Batman v Superman... is a masterclass in blockbuster audio



Picture Quality

Winner

STAR WARS: THE FORCE AWAKENS

When the *Star Wars: The Complete Saga* Blu-ray boxset was released in 2011 concerns were raised about the use of digital filtering on several of the transfers. Thankfully, there are no such problems with the Blu-ray debut of the latest instalment in the galactic franchise.

Shot primarily on 35mm (with selected scenes captured using IMAX 70mm cameras) ...*The Force Awakens* makes a flawless transition to Blu-ray. Colour saturation is rich, ensuring that the laserblasts, explosions and (especially) the Lightsabers look every bit as vibrant as you'd hope.

Detailing is also pristine, revealing the wear and tear in the costumes and spacecraft – a key element in the 'lived-in' aesthetic the franchise strives for. Black levels, meanwhile are deep-space deep. It all adds up to a bigscreen experience that puts you right amongst Rey, Finn *et al.*

Also Nominated

Crimson Peak
Spectre
The Jungle Book
The Shallows



The phrase 'reference status' was made for transfers like this one



Disc Fail



Kung Fu Panda 3: Awesome Edition

Twentieth Century Fox UK really let its panda down with this ironically titled 'Awesome Edition' of the DreamWorks animated hit. Due to a monumental misfire, the localised UK soundtrack was only provided as a lossy DTS 5.1 mix – something of a kick in the teeth for a franchise that has always delivered astonishing audio. To make matters even worse, the superior DTS-HD MA 7.1 track is actually present on the UK disc, but can only be accessed when it's spun in a Region A deck!



World Cinema



Winner

THE ALMODÓVAR COLLECTION

StudioCanal's terrific boxset went some way to addressing the previous shortfall in the availability of Pedro Almodóvar's films on Blu-ray in Blighty. Based on new restorations from the original camera negatives, the boxset features gorgeous HD presentations of six of the acclaimed Spanish director's outings – *Dark Habits*, *What Have I Done to Deserve This?*, *Law of Desire*, *Women on the Verge of a Nervous Breakdown*, *Kika* and *The Flower of My Secret* – alongside choice bonus bits. ¡Cómo mola!

Also Nominated

A Touch of Zen: Limited Edition
Underground
Ivan's Childhood
Akira Kurosawa's Dreams



Animation



Winner

THE IRON GIANT: SIGNATURE EDITION

Warner Bros. makes amends for its previous desultory treatment of Brad Bird's animated masterpiece with a hi-def package that offers beautifully restored 2.40:1-framed 1080p visuals, dynamic DTS-HD MA 5.1 sonics and a wealth of extra features (not least the refreshingly frank documentary *The Giant's Dream*). It may have taken 17 years, but *The Iron Giant* has finally been given the lavish release that it always deserved.

Also Nominated

Evangeline 3.33: You Can (Not) Redo
Zootopia
Finding Dory
Kubo and the Two Strings



Extra Feature



Winner

THE TROUBLE WITH TITIAN REVISITED (BLOOD BATH: LIMITED EDITION)

The best extras are those that educate about the movies they accompany. The 81-minute *The Trouble with Titian Revisited* does just that, with erudite film critic Tim Lucas taking viewers on a fascinating exploration of how Roger Corman transformed a Yugoslavian crime film into a shlocky vampire flick. It's one *Making of...* that's far more interesting than the films themselves.

Also Nominated

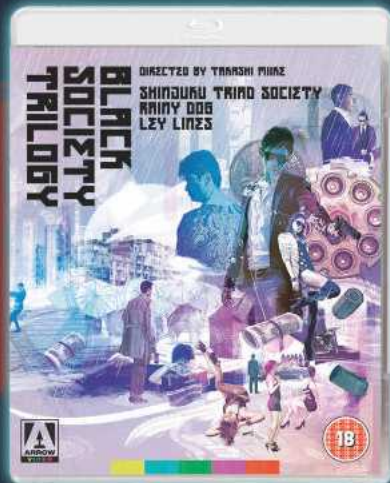
Me Me Lai Bites Back
(*Man From Deep River*)
Making The Martian
(*The Martian: Extended Edition*)
The Giant's Dream
(*The Iron Giant: Signature Edition*)



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★ TV Release



Winner

DISSENT & DISRUPTION: ALAN CLARKE AT THE BBC (1969-1989)

Anybody who thinks that we're living in a 'Golden Age' of TV drama should take a look at this astonishing BFI boxset devoted to Liverpoolian director Alan Clarke.

Over the course of its 13 discs (11 Blu-rays and two DVDs) this set brings together all of the surviving one-off dramas and plays Clarke helmed for the BBC between 1969 and 1989. From episodes of *Half Hour Stories* and a Brecht adaptation starring David Bowie to better-known fare such as *Scum* and *The Firm*, it's all here.

On top of this wealth of peerless TV dramas (all nicely restored, of course) the BFI has assembled a staggering array of bonus features including a new 12-part documentary about Clarke's career and a 200-page book of essays about the featured dramas.

Also Nominated

The Wonder Years: The Complete Series – Deluxe Edition
The Flash: The Complete Second Season
Game of Thrones: The Complete Sixth Season



One-off dramas such as *Nina* (top) and *Road* (above) were once the cornerstones of primetime television in the UK

★ Book of the Year

Guillermo del Toro's Pan's Labyrinth: Inside the Creation of a Modern Fairy Tale



A step-up from the standard 'Art of...' book, this enchanting full-colour hardback

offers an in-depth look at the creation of del Toro's 2006 genre classic. While the abundance of rare art and photos would be enough to make this tome a must-have for fans, it's biggest strength is actually the frank accounts of the difficulties del Toro encountered in making his fantasy film. Over 200 pages, and featuring additional goodies such as script excerpts, it's a fine companion to the Blu-ray.



Demo Sequence



Winner

**AIRPORT SHOWDOWN
(CAPTAIN AMERICA: CIVIL WAR 3D)**
Marvel's third *Captain America* flick certainly lived up to its sub-title with this titanic tussle between two teams of superheroes. The comic book action that unfurls offers up a sonic showcase of expansive dynamics, fluid channel transitions and seismic levels of LFE. It looks superb too, with the 3D platter providing plenty of screen-popping effects – as well as being the only way of seeing the sequence in its original IMAX aspect ratio.

Also Nominated

The Falcon flies again
(*Star Wars: The Force Awakens*)
Swarming the Enterprise
(*Star Trek Beyond*)



Visual Effects



Winner

THE JUNGLE BOOK
Jon Favreau's recent live-action remake of Disney's *The Jungle Book* is a fabulous film from any standpoint – but even more so when you consider that the entire thing was shot on a soundstage in Los Angeles. Drawing on the talents of award-winning visual effects director Rob Legato and several VFX houses (including WETA and MPC), *The Jungle Book* is populated by a cutting-edge menagerie of CGI animals that feels completely real – meaning you're more likely to care what happens to them....

Also Nominated

The Martian
Star Wars: The Force Awakens
Warcraft: The Beginning
The BFG



VOD Series



Winner

STRANGER THINGS (NETFLIX)
Tapping into our nostalgia for the 1980s, and channelling a good slice of Stephen King-style mystery into its narrative, Netflix's *Stranger Things* was this year's water-cooler TV event and enjoyably original, despite all its obvious homages. And as we've come to expect from a Netflix show, the eight episodes oozed AV quality, with gorgeous native 4K streams and sound design that pays real attention to detail. No Blu-ray release yet, so get online to binge it before S2 rolls around.

Also Nominated

Ash vs Evil Dead (*Virgin Media*)
Luke Cage (*Netflix*)
Black Mirror (*Netflix*)
Mr Robot (*Amazon Prime*)



★ Disc of the Year

Winner

STAR WARS: THE FORCE AWAKENS 3D – COLLECTOR'S EDITION

We did consider eschewing this triple-disc release as only a mere seven months have elapsed since the original Blu-ray outing for the *Star Wars* sequel. Yet while we appreciate that some will be annoyed about this double-dip strategy, there's no escaping the brilliance of Disney's Collector's Edition package.

Here, the 2D version is joined by the 3D encode (as seen theatrically) making its home debut, and it's one that stereoscopic system owners will dig – there's depth, scale and immersion in spades. The DTS-HD MA 7.1 mixes remain reference-grade, too.

And then there are new extra features, particularly the chat track from director J.J. Abrams which is essential listening for any Tatooine moisture farmer, not to mention the pretty-as-a-picture slip-cover packaging.

Together, it adds up to an irresistible BD set.

Also Nominated

Dissent & Disruption: Alan Clarke at the BBC (1969-1989)
The Revenant [Ultra HD Blu-ray]
The Iron Giant: Signature Edition



The three-disc release offers everything fans want – except 4K, actually...

says the homeowner of this 4K home cinema with Dolby Atmos 7.2.4



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www.cyberhomes.co.uk



Film Boxset



Winner

THE HERSCHELL GORDON LEWIS FEAST

The past year has seen Arrow Films release some cracking boxsets across its Video and Academy imprints, but none can measure up to this premium-priced set devoted to the 'godfather of gore'. Boasting meticulous restorations of 14 of Herschell Gordon Lewis' films – including the notorious *Blood Feast*, *Two Thousand Maniacs!* and *Color Me Blood Red* – alongside a plethora of

interviews, commentaries, video essays, outtakes and other treats, it certainly provides a 'feast' for exploitation cinema junkies. There's obviously a lot of love gone into producing this package – and we love it, too.

Also Nominated

American Horror Project: Volume One
Buster Keaton: The Complete Short Films 1917-1923
The Almodóvar Collection



Icon of the Year



Winner

J.J. ABRAMS

The last 12 months have seen Mr Abrams' stock rise ever higher, as the writer/director/producer has successfully rebooted one film franchise (*Star Wars*), kept another ticking over (*Star Trek*), returned to an old fave (*10 Cloverfield Lane*) and brought more goodies to the smallscreen (*Westworld*).

It's his work with Lucasfilm that stands out of course, with *The Force Awakens* effectively erasing our bad memories of Jar-Jar Binks. Under his guidance, the series looks set to go from strength to strength.

Also Nominated

Kathleen Kennedy [Lucasfilm]
Dwayne 'The Rock' Johnson
Doctor Strange's Cloak of Levitation



Videogame



Winner

UNCHARTED 4: A THIEF'S END

There are few game series as cinematic as Naughty Dog's *Uncharted*. Even so, *Uncharted 4: Thief's End* elevates things to a whole new level. Putting players once more in the shoes of professional treasure hunter Nathan Drake, the game zips around more locations than your average James Bond flick and serves up enough explosive action to make Michael Bay green with envy. Add to that the dynamic Full HD visuals (running at a consistent 30fps) and 7.1 soundscape and you have a five-star gaming blockbuster.

Also Nominated

Dark Souls III
Gears of War 4
Battlefield 1



Ultra HD Blu-ray



Winner

THE REVENANT

Alejandro Iñárritu's Oscar-winner is a gruelling, brutal and harrowing period epic that astonishes when it comes to its cinematography – Iñárritu famously opted to shoot only using natural light. This attention to detail is something that 20th Century Fox's Ultra HD Blu-ray release relishes. Indeed, *The Revenant* has become the poster boy of the UHD generation, showcasing the format's appeal, and deservedly so.

4K image clarity, aided by the native resolution of the source, is sumptuous, daring you to immerse yourself in its CinemaScope vistas and Leonardo

DiCaprio's facial hair. HDR grading and colour depth is even more striking, with shadow details and varied hues in evidence that are AWOL on the standard BD platter. Extras are perfunctory and a 3D audio mix would have been nice, but that's just us nit-picking really. Buy it, watch it, watch it again.

Also Nominated

Pacific Rim
The Amazing Spider-Man 2
X-Men: Apocalypse
Labyrinth: 30th Anniversary Edition



UHD HDR's expanded luminance adds another layer of beauty to *The Revenant's* poetic vistas

Memories of movies

This award-winning cinema room balances modern technology with an awesome old-school aesthetic

KIT CHECKLIST

SCREEN RESEARCH: 130in, 2.35:1 acoustically transparent screen with automated masking

SONY: VPL-VW1100ES 4K projector

PANAMORPH: Anamorphic lens

SONY: FMP-X5 4K media player

TRIAD: 8 x InWall Mini/4 LCR speakers; 3 x InRoom Silver LCR speakers; 2 x InRoom Gold Sub subwoofers; 2 x RackAmp 600 amplifiers

PROCELLA AUDIO: 2 x DA-05 DSP power amplifiers

INTEGRA: DHC-80.6 AV processor/amplifier;

DTA-70.1 power amplifier; DBS-30.3 Blu-ray player

KALEIDESCAPE: Strato 4K Ultra HD movie server

LUMAGEN: Radiance 4K Pro 4242 scaler

AMAZON: Fire TV 4K media player

APPLE: Apple TV

ROKU: Roku 4 4K media player

SAVANT: Integrated control system

LUTRON: Homeworks QS P6 lighting control



THIS PROFESSIONAL INSTALL – originally featured in HCC #261 – was one of our favourites of 2016, because it shows that a modern cinema room can still offer some vintage theatre charm. Although with Dolby Atmos audio and Ultra HD visuals, there's nothing old-fashioned about it.

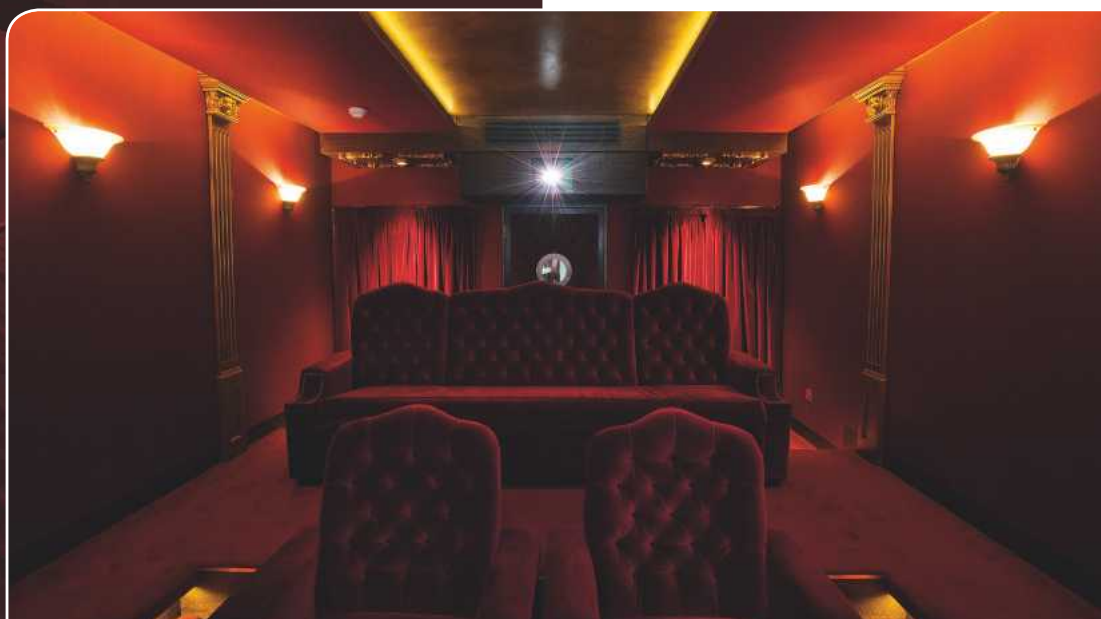
Also a winning project in this year's CEDIA Awards, the room was designed and fitted by UK company Cyberhomes, with the owner demanding a home cinema that reminded him of the movie house he used to visit as a child. Following a pre-visualisation process, work begun on assembling the high-end hardware, which includes a 130in 2.35:1 projector screen, Panamorph anamorphic lens, 4K-capable Sony VPL-VW1100ES projector, 7.2.4 speaker system from US brand Triad (with in-ceiling heights), power and processing from Procella Audio and Integra, and sources including Sony, Apple, Amazon and Kaleidescape players.

To get the system sounding its best, an acoustic construction was undertaken employing isolated plasterboard and stud work, with bass, mid-range and high-frequency treatment panels supplied by specialist outfit RPG Europe, providing, says Cyberhomes, 'a balanced and controlled room'. Even the drop ceiling, which doubles as a cabling thoroughfare, was acoustically fettled; the cinema room doors are sealed for sound isolation, too.

Opulent experience

The cutting-edge hardware is joined by a wonderful room design that nails the brief of retro opulence. Little details, such as the front-of-screen stage, ceiling-based light circle and thick red curtains add that extra level of charm. And the user experience is enhanced by tying in these ambient touches with the AV – cue up a movie and the motorised front curtains open to reveal the screen, while lighting dims to just the right level to pick through a pack of popcorn.

The owner, naturally, gets a thrill every time he uses the room. 'The Ultra HD and 3D sound combination is truly spectacular!' ■





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REVIEWS

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LG's dark star



The 65in OLED65E6 adds Dolby Vision HDR support to its black-level masterclass – we rate it as LG's best 4K flatscreen yet. See p40

HCC RATINGS KEY...

| | |
|---------------|-------|
| Outstanding | ★★★★★ |
| Above average | ★★★★☆ |
| Acceptable | ★★★☆☆ |
| Disappointing | ★★☆☆☆ |
| Dire | ★☆☆☆☆ |

All prices quoted are approximate and may have changed



Sony KD-65ZD9

The 65ZD9 is an HDR hero and a prime contender for best TV of the year, says **John Archer**

AV INFO

PRODUCT:
65in 4K (and 3D)
Android TV with
direct LED lighting

POSITION:
Sony's flagship 65in
TV for 2016

PEERS:
Samsung
UE65KS9500;
LG OLED65E6

HDR IS PROVING a tough nut for TVs to crack. Not a single model I've seen this year has been able to cope with every part of its demands. Sony's 65ZD9, though, gets closer than any of its rivals to solving the HDR conundrum.

The TV sits at the top of the brand's current range (there are, though, larger models available, including a 100in beast for those with a spare £60,000). So, how does Sony denote that top-flight status? By introducing a new aesthetic that sees its bezel flaunting a gold trim. It's eye-catching, although the chunky feeling of the TV (aided by the angled stand) might not be to everyone's taste.

The TV doesn't offer anything 'out there' on the connections front. You get the four HDMI's, three USB's and network hookups you'd expect on any 2016 flagship. But what's special about the 65ZD9 is what's on the inside.

For starters it uses a direct LED lighting system (where the lights are placed directly behind the screen). Even better, every one of the more than 600 LEDs that illuminate the TV's pictures can have its light controlled independently of its neighbours.

That's not the end of the 65ZD9's light management either. Sony says it employs 'focused beam' technology to enable groups of LEDs to combine their light for especially intense parts of the picture, while the brand's X-Tended Dynamic Range processing is on hand to redirect power from dark areas of the picture to bright ones.

Now, even the ZD9's backlight control doesn't get close to the pixel-by-pixel approach that is offered by OLED displays. Countering this, however, is OLED's current maximum brightness of around 700 nits, which doesn't get

near the phenomenal 1,800 nits the 65ZD9 is suggested to achieve. And while black levels of the sort that OLED excels at are undoubtedly a key factor in a convincing picture, so is the sort of brightness the 65ZD9 can give.

Away from its backlight tech, the TV carries Sony's Triluminos technology, which helps it deliver more than 90 per cent of the DCI-P3 colour space. And to get the most from the TV's HDR-friendly hardware, Sony has introduced a new chipset (the X1 Extreme) that claims a 40 per cent power bump. It also upgrades 8-bit and 10-bit sources up to '14-bit equivalent gradation' to remove colour striping, and boosts object- and depth-recognition elements to aid upscaling of HD and SD sources.

If there's a bum note in the 65ZD9's fearsome specs it's the use of Android TV as its main smart platform. If you ask me, a set that promises a luxury experience deserves better. I find Android the most sluggish, buggy, overbearing and unfocused of all the current interfaces. The TV does, though, support the YouView catch-up TV platform, and offers HDR and 4K versions of Netflix and Amazon apps.

Bright star

The 65ZD9's backlight innovations have all been developed with a focus on HDR – and in this regard they pay off mind-blowingly well. The first thing that hits you is the picture's incredible brightness. Bright scenes in Ultra HD Blu-ray titles radiate with an intensity I've never seen on a domestic screen before. This, in turn, makes you more aware of just how much impact the bright end of HDR's expanded luminance range can have. As an example, when viewed on the 65ZD9, the shoot-out on the bridge in *Deadpool* appears wonderfully vivid, natural and three-dimensional, with the only downside being that switching back to standard dynamic range content feels like such a drag.

What's especially noteworthy about the screen's brightness, though, is the way it doesn't have any real negative effect on darker parts of the picture. For instance, there's no trace of bright elements in predominantly dark shots – such as the owl that flies around the opening credits of *Labyrinth* – having their brightness reduced to help the TV boost its black level performance. Nor are black areas as prone to being invaded by light pollution from bright elements as they are with rival models.

Labyrinth's opening-credits owl again provides a great example of this latter strength. The amount of grey light haloing around the bird is more subtle and restrained than it is with any other LED TV I've seen. With Samsung's KS9500 TV, for instance [see p41], the extent of light pollution around the owl isn't very intense but spreads over quite a large area. With Panasonic's DX902 [see p43], the haloing spread is fairly limited but looks brighter. Here, light pollution is limited in terms of both the screen real estate it affects and the intensity with which it appears.

Black colours are deep and true, while still delivering plenty of subtle shading. This is the icing on the contrast cake that home cinema fans will cherish. There's an extreme quality to HDR pictures, but ruthlessly controlled.

Colour handling doesn't disappoint either. From the gorgeous cartoon palette of *The Peanuts Movie* on 4K BD to the HDR- and wide colour gamut-enhanced tones of *Forza Horizon 3*'s cars on the Xbox One S, the Sony pumps out colours as bold, rich and riveting as you'll expect, with finessed blends that encourage close inspection.

Non-HDR 4K content is a disappointment to the extent that you no longer benefit from the 65ZD9's maximum

SPECIFICATIONS

3D: Yes. Active **4K:** Yes. 3,840 x 2,160 resolution **HDR:** Yes. HDR 10 **TUNER:** Yes. Freeview HD (plus YouView catchup); satellite **CONNECTIONS:** 4 x HDMI inputs; 3 x USB; Ethernet port; headphone jack; subwoofer line out; analogue audio inputs; optical digital audio output **SOUND:** 20W **BRIGHTNESS (CLAIMED):** 1,800 nits peak **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,462(w) x 847(h) x 78(d)mm **WEIGHT (OFF STAND):** 32kg

FEATURES: Built-in Wi-Fi; USB multimedia playback; DLNA network streaming; Backlight Master Drive technology; X1 Extreme chipset; Android TV platform; Motionflow XR; Bluetooth connectivity; GoogleCast; HDCP 2.2

potential. However, compared more fairly with other TVs running 4K in standard dynamic range mode, the Sony continues to beguile. Colours retain their rich feel and nuances, and the contrast range still appears more extreme than you might expect from an SDR performance.

Ultra HD image sharpness is striking. You can, for instance, see details of all those Premier League footballer tattoos during UHD broadcasts that escape the eye with lesser 4K TVs. And all that 4K finery simply extends the sense of immersion you get from a screen this big.

UHD football confirms that the 65ZD9 follows in the footsteps of other recent Sony sets by benefitting from arguably the best motion handling in the current TV world. Even without using the available motion processing, players jink across the screen without suffering much judder or resolution loss. And you can remove such issues if you use one of the TV's relatively low-powered frame trikey systems without suffering significantly with artefacts.

The 65ZD9's talents don't stop at 4K. Sony's 4K TVs have always been good at upscaling HD, but the new chipset employed here appears to be fine-tuning the process even further. A run through of the *Ghostbusters* reboot on Blu-ray finds the upscaled picture combining a sense of extra detail with refined colour subtlety and image depth. It also does a remarkably sure-footed job of processing out any noise a sub-4K source might contain.

Active 3D pictures aren't as convincing as 2D efforts. They enjoy a good sense of depth thanks to the TV's excellent contrast, but there's some pronounced crosstalk ghosting noise around, for instance, the lights of *Pacific Rim*'s shatterdome, and the Jaeger pilot's white 'armour'. And, as an aside, it's also hard to accept the rather dark look of 3D images compared to HDR.

More niggles are that the 65ZD9 only operates well within a fairly limited viewing angle; watch from more than 30 degrees – maybe even a little less – and light haloing suddenly becomes much more noticeable. An OLED TV is a better bet in this situation. Meanwhile, the audio performance is slightly underwhelming by today's standards, with only moderate bass impact.

I'm not going to let these over-ride my feelings, though. Nor can the TV's lack of Dolby Vision support count against it, as that's a format that's yet to make waves. These are molehills against the mountains of unprecedented picture glory that Sony's masterpiece delivers. Superb ■

1. The ZD9 employs a direct LED lighting array for pin-point illumination

HCC VERDICT

★★★★★

Sony KD-65ZD9

→ £4,000 → www.sony.co.uk

WE SAY: The 65ZD9 delivers hands down the best HDR picture quality I've ever seen, and it's no slouch with SDR either. Not cheap, but it's worth it.

LG OLED65E6

This high-end OLED TV is the best that LG has ever made, suggests **Steve May**



THERE'S SOMETHING BEAUTIFUL about the LG E6 – and that's without turning it on. With its thin picture-on-glass design and Harman/Kardon crafted soundbar, this high-end OLED will make visitors to your movie room gawp in surprise.

The TV lies below LG's Signature G6 model [see HCC #264], but uses the same panel and image processing technology – differences between the two concern the potency of the speaker bar and stand design. We're reviewing the 65in version; it's also available at 55in.

LG's WebOS user interface (now onto v3.0) continues to impress with quick navigation and colourful graphics. Apps, channels and

inputs are accessed via a bar at the bottom of the display. You can reorder the tiles here to suit. Content support is wide: there's a good range of video services, including BBC iPlayer and ITV Hub, plus Netflix, Amazon and Now TV. The real attraction of this set is its image

quality. Pleasingly, this is superb straight from the box – those uninterested in calibration (the TV offers extensive controls) can stick to Standard or Cinema. Just make sure that sharpness is set no higher than 10, as excessive ringing starts to kick in beyond that, effectively obscuring fine detail.

Unlike many rival sets, and perhaps a USP for some, you still get to wear funny glasses as the E6 is passive 3D-compatible. Having suffered some dreadful passive 3D implementations in the past, it's a relief to find the presentation here is excellent, with a real sense of depth and no obvious crosstalk.

And with 2D the E6's picture performance is outstanding. This TV looks positively sensational with regular 1080i broadcasts, be they via Sky or DVB. Upscaled HD content has a sheen that's appealing and bright peak whites that pop – you'll notice this immediately on graphics and white text. And with 4K content, fine detail can be sublime.

Of course, it's in the contentious area of HDR that things get particularly interesting. The LG is certified Ultra HD Premium, but as it's an OLED panel, this means it only needs to deliver 540 nits peak brightness, joined by a better-than-LCD black level of 0.0005 nits. This it appears to manage without a problem,

SPECIFICATIONS

3D: Yes. Passive **4K:** Yes. 3,840 x 2,160 resolution **HDR:** Yes. HDR 10; Dolby Vision **TUNER:** Yes. Freeview HD; satellite **CONNECTIONS:** 4 x HDMI inputs; 3 x USB (one 3.0); mini-jack component/composite video input; Ethernet; optical digital audio output; CI slot; headphone jack **SOUND:** 40W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** 'Infinite' **DIMENSIONS (OFF STAND):** 1,461(w) x 893(h) x 56.7(d)mm **WEIGHT (OFF STAND):** 22.8kg

FEATURES: Dual-band Wi-Fi; DLNA/USB multimedia playback; USB timeshifting; WebOS 3.0; Bluetooth; Ultra HD Premium certified; OLED panel

and because OLED is self-emissive, there's no backlight clouding issues to diminish bright highlights. Deep blacks are gorgeous. It can't match the luminosity of rival premium LED TVs, but the dynamic effect is still palpable.

The E6 also supports Dolby Vision HDR. Currently this means select content via Netflix, but could be useful futureproofing if Ultra HD Blu-ray adopts the format. Netflix's *Ridiculous 6* may not be a rollicking classic, but via this LG it does feature beautiful textures, and has real glint and shine.

It's impossible to compare HDR 10 with Dolby Vision on the same Netflix streams – you get what you're given. So does it look better than HDR 10? With a paucity of content and no other compatible displays, it'd be foolish to say. Dolby's format certainly looks good on this LG, though, showcasing nuanced colours and subtle light handling.

On some super-bright LCD TVs, peak HDR can actually be pretty startling and hard to get used to. At no point does that apply to LG's OLED visuals. This is a sumptuous eyeball experience, rather than overpowering.

The 4K Blu-ray release of *Batman v Superman...* reveals just how dramatic HDR colour grading can appear. The wider gamut offered by the LG gives full rein to Zack Snyder's heavily-filtered aesthetic. Care needs to be taken with motion handling, though, as LG's TruMotion processing is heavy-handed. Both the Smooth and Clear settings introduce overt artefacts. Turning TruMotion off solves this, but there's a drop in resolution.

The E6 may lack the high-brightness impact of LED designs, but there's a purity to its images that harks back to the plasma TVs of yore. Dolby Vision and a cracking sound system are exciting additions ■

AV INFO

PRODUCT:
4K & HDR OLED TV

POSITION:
Premium HDR OLED, sitting one rung beneath LG's Signature G6 series

PEERS:
Panasonic TX-65DX902B;
Samsung 65KS9500

HCC VERDICT



LG OLED65E6

→ £4,500 → www.lg.com/uk

WE SAY: OLED makes a convincing case for itself with this drop-dead gorgeous display – fabulous with HD, stunning with 4K HDR.

Samsung UE65KS9500

Direct-lit and pushing its LEDs to new heights, **John Archer** enjoys the impact of this high-price HDR TV

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SAMSUNG HAS PUSHED the luminance of its LCD TVs to new heights. And representing the Everest when it comes to brightness peaks is the 1,400 nits pumped out by the 65in UE65KS9500, which contributes to a contrast performance that surpasses the target figure recommended by the UHD Alliance's 'Ultra HD Premium' specifications.

This curved TV isn't just fixated on HDR's expanded brightness, though. It also features a native UHD resolution along with Quantum Dot technology to make the most of the wide colour gamuts routinely delivered alongside HDR content. And to deliver localised light control with the clarity the UE65KS9500 is striving for, Samsung has turned to a direct LED lighting engine, rather than the edge LED system found in its KS9000 TVs. This engine combines with a local dimming system.

AV INFO

PRODUCT:
65in 4K TV with HDR

POSITION:
Samsung's flagship
65in 4K screen

PEERS:
LG OLED65E6;
Panasonic
TX-65DX902;
Sony KD-65ZD9

Glutton for HDR goodness that I am, I pushed the UE65KS9500 to its limit right away with *The Amazing Spider-Man 2* on Ultra HD Blu-ray. And for much of the time the results were nothing short of stellar.

Samsung's brightness claim rings true. This 4K whopper opens up the lighter end of HDR visuals, which breathes new naturalism into bright scenes but also adds incredible punch to bright peaks within otherwise dark shots. The electricity-fuelled scrap with Electro at the power station looks believable, detailed, immersive and beautiful. Electrifying, even.

The Times Square fight, meanwhile, also highlights a spectacular colour performance. There's a delightful combination at work of a huge colour range and ground-breaking brightness that results in stunning saturations.

Brightness isn't delivered with wanton abandon. It's used for impact, as it should be, rather than being a defining constant. Even more importantly, it's achieved via the direct lighting/local dimming engine without robbing the image of an excellent black level response. There is a price to pay, though, in the shape of some occasional light 'blooming' around

SPECIFICATIONS

3D: No. **4K:** Yes. 3,840 x 2,160 resolution
HDR: Yes. HDR 10 **TUNER:** Yes. Freeview HD; satellite
CONNECTIONS: 4 x HDMI inputs; 3 x USB inputs; optical digital audio output; RF input; Ethernet **SOUND:** 60W, 4-channel
BRIGHTNESS (CLAIMED): 1,400 nits **CONTRAST RATIO (CLAIMED):** 'Mega' **DIMENSIONS (OFF STAND):** 1,441(w) x 833(h) x 115.9(d)mm
WEIGHT (OFF STAND): 28.2kg

FEATURES: USB and DLNA multimedia playback; built-in Wi-Fi; HDR+ HDR upscaling engine; Tizen-based smart system; Netflix and Amazon 4K apps; direct LED lighting; Quantum Dot technology

bright objects. This is a small distraction versus the more pronounced light banding you get on the step-down KS9000 series, but still an irritation.

This top-dog Samsung isn't just outstanding at revealing the joys of HDR and wide colour gamut tech. It also displays native UHD sources with a huge amount of sharpness and clarity, ramming home the advantages of all those pixels with a precision precious few rivals can match.

Full HD on the up

The Full HD Blu-ray of *The Amazing Spider-Man 2* lacks that HDR impact, but finds this display proficient at upscaling to its UHD resolution. There's a crisp, clean feel to the image. And you can get HDR if you want, sort of – Samsung has introduced HDR+, a feature that expands the luminance and colour range of standard dynamic range sources to give them an HDR effect. This is no rival for true HDR; it is, though, very effective, adding a tangible level of image pop. I'd suggest it's a real option for people keen to get the maximum impact from their TV as frequently as possible.

Motion can cause some problems. I found the image suffering quite heavily with judder during camera pans. And when playing Ultra HD Blu-rays using Samsung's Movie preset – the setting reckoned to deliver the most accurate HDR picture – areas such as white or blue skies that contain lots of subtle colour shifts can look strangely stripy.

Still some areas for Samsung to work on then – as there is for every TV brand when it comes to HDR – but this remains one of the most spectacular TVs I've spent time with this year. I cannot imagine any buyer being disappointed ■

HCC VERDICT



Samsung UE65KS9500

→ £3,800 → www.samsung.co.uk

WE SAY: An extravagant demonstration of what the Ultra HD, HDR and wide colour spectrum technologies can achieve. No 3D, though.

Philips

65PUS7601

Philips makes direct LED lighting and 4K HDR playback affordable. **John Archer** looks for the catch



PHILIPS' 65PUS7601 LOOKS like a bargain. It's a 65in flatscreen boasting plenty of good stuff – HDR playback, native UHD resolution, Ambilight, direct LED lighting with local dimming across an impressively high number (128) of zones – for a price that undercuts similarly specified TVs.

There are compromises associated with the price, however. Brightness is rated at a relatively low peak of 700 nits, and Philips' panel only reaches 76 per cent of the DCI-P3 colour space. Will this see it caught short with Ultra HD/HDR?

The 65PUS7601's images are driven by powerful processing. It gets the top-line Perfect Pixel Ultra HD system, which, from experience, delivers real improvements over the step-down Pixel Precise Ultra HD engine.

Careful setup is required with some aspects of the screen's processing, though. Particularly key is Perfect Contrast. If you want the TV to default to the industry HDR EOTF standards, you need to turn this feature off to reduce brightness but ensure clipping (detail loss) doesn't set in.

Other user options include various levels for Perfect Natural Motion and Clear Motion, MPEG noise reduction, and Ultra Resolution. These should all be approached with a degree of caution, as they do more harm than good to your beloved content on their highest levels.

Engaging and immersive

Once I'd tweaked the 65PUS7601's settings, it delivered what I'd hoped for: a slightly tamed but still engaging HDR experience.

When it comes to HDR's luminance, the set manages a good sense of it for a 700-nit peak LCD panel. It adopts a slightly darker baseline brightness value for HDR than it uses for SDR content. This gives it more 'space' to deliver brightness peaks. Crucially, though, this reduction in brightness doesn't go so far that

SPECIFICATIONS

3D: No. **4K:** Yes. 3,840 x 2,160 resolution
HDR: Yes. HDR 10 **TUNER:** Yes. Freeview HD
CONNECTIONS: 4 x HDMI inputs; 3 x USBs; optical digital audio output; headphone jack; Scart; CI slot; Ethernet **SOUND:** 30W
BRIGHTNESS (CLAIMED): 700 nits peak
CONTRAST RATIO (CLAIMED): N/A
DIMENSIONS (OFF STAND): 1,449(w) x 835(h) x 67(d)mm **WEIGHT (OFF STAND):** 26.3kg

FEATURES: Three-sided Ambilight; Perfect Pixel Ultra HD processing engine; HDR upscaling; built-in Wi-Fi; USB/DLNA multimedia playback; Android TV; direct LED lighting; local dimming

it leads to the silhouetting problems and light/dark imbalances I've seen on other sub-1,000 nit HDR displays.

And thanks to assured direct backlight handling, HDR images suffer little with clouding issues. With the Perfect Contrast feature deactivated I saw hardly any light 'halos' at all. Put this direct-lit TV head-to-head with an edge LED competitor and you'll likely notice the difference.

Black levels are deep and rich for an LCD TV, a benefit of Philips in this instance using a VA panel in favour of an IPS design, which the brand employs elsewhere.

The TV isn't quite as successful with the wide colour gamuts associated with most HDR sources, however. The 65PUS7601 doesn't have the native colour reach to deliver the same saturations and nuanced tones witnessed on the very best displays. I also spotted occasional traces of colour striping.

That said, with the exception of one or two low-lit skin tones, colours seldom look at all unnatural, and no tones appear to stand out starkly against the rest, leading to an often beautifully balanced image.

And there's enough colour finesse, combined with the impressive light management, to let you soak up the beauty of the screen's 4K resolution. Premium UHD footage, such as the deer hunting scenes at the start of *The Revenant*, exhibit excellent clarity and detail. Motion blur and judder does, slightly, dampen the effect; I'd recommend using the lowest setting of Philips' Perfect Natural Motion tool.

So, while this screen's handling of HDR 4K sources isn't as explosive as on other challengers, it's very watchable, and having less backlight-related picture distractions is welcome. A great effort from Philips ■

AV INFO

PRODUCT:
65in 4K LED TV with direct lighting and aggressive price tag

POSITION:
A step below Philips' top-tier AmbiLux TV

PEERS:
Samsung 65KS9500; Panasonic 65DX902

HCC VERDICT



Philips 65PUS7601

→ £2,000 → www.philips.co.uk

WE SAY: It might not hit the spec numbers of high-end HDR TVs, but the 65PUS7601's balanced pictures prove surprisingly irresistible.

Panasonic TX-65DX902

Panasonic's Ultra HD Premium DX902 is a dazzling TV in every way, says **Steve May**



PANASONIC'S TX-65DX902 IS its challenger to the 4K HDR crown, and certified Ultra HD Premium by the UHD Alliance. In addition to this badge of honour, the DX902 (also available in a 58in version for around £500 less) earns THX 4K certification and is active 3D capable.

The TV weighs in at 34.5kg. It's certainly a substantial proposition, and that doesn't include the stand, which is also pretty hefty. Build quality overall is formidable. Pedestal feet are ranged close to each edge of the

panel, so don't expect to sit this 65-incher on a compact AV stand.

Twin terrestrial tuners embrace Freeview Play, the DVB platform which integrates catch-up for iPlayer, ITV Hub, All 4 and Demand 5. Joined by additional VOD platforms, it makes the Panasonic stand out in a world

where other TVs are struggling to satisfy our VOD needs. The onboard media player is excellent, too, providing compatibility with most video and audio codecs.

Blinded by the lights

Visually, the DX902 is, quite literally, amazing. The brand's Wide Colour Phosphor panel, which claims to outperform Quantum Dot tech when it comes to colour range, is astonishing in terms of saturations and brightness levels are sky-high. With Ultra HD Blu-rays, it positively shines.

Not that you need an HDR source for this set to wow – the set impresses with SDR and Full HD content too. Playing *The Division* on a PS4 is a stonking experience – the TV is a dab hand at upscaling sources; subtle texture, shadow detail and deep blacks eked from the console game look exhilarating.

At the heart of the DX902 is the most advanced chip ever to grace a Panasonic TV, its Studio Master HCX+ (Hollywood Cinema Experience) processor. A slight step down version of this (without the '+') resides in the brand's DX802 and 750 series screens.

SPECIFICATIONS

3D: Yes. Active **4K:** Yes. 3,840 x 2,160 resolution **HDR:** Yes. HDR 10 **TUNER:** Yes. 2 x Freeview HD; 2 x Freesat HD **CONNECTIONS:** 4 x HDMI; 3 x USB; component video; optical digital audio output; Ethernet; composite video; SD card slot; headphone output **SOUND:** 40W (2.1) **BRIGHTNESS (CLAIMED):** Over 1,000 nits peak **CONTRAST (CLAIMED):** 'Ultimate' **DIMENSIONS:** 1,457(w) x 844(h) x 64(d)mm **WEIGHT:** 34.5kg

FEATURES: Dual-band Wi-Fi; Studio Master HCX+ processor; Local Dimming Ultra; 4K THX certified; Ultra HD Premium; Netflix and Amazon 4K; preset picture modes; Adaptive Backlight Control

To achieve its high contrast, the TV employs a full array backlight. There are 512 LED lights arranged in a so-called 'honeycomb' structure that is designed to prevent light leakage. The arrangement, in theory, allows dark areas to remain dark while points of bright light can shine like tiny stars.

While this works well, enabling the screen to offer both scintillating highlights and deep blacks, it still can create visible haloes around objects. A firework demo sequence ruthlessly revealed these backlight blocks. And haloing isn't restricted to HDR content. Scenes of a night flyover of Tokyo, with its myriad lights, from a standard Blu-ray test disc, became a shimmering field of light blocks with the adaptive backlight set on Mid. The same sequence on Min proved more acceptable but did sacrifice black depth. I should stress that, mostly, the backlight wasn't an issue, and a superior option to an edge-lit set – but when it stood out, the sore thumb was obvious.

Other tweaks include assorted noise reductions plus ambient sensor. The latter is probably best left off, as it'll visually boost the image depending on transient light levels in the room. More pertinent is that Panasonic has added a new option to its Intelligent Frame Creation processing, intended to reduce motion blur. A custom mode lets you manually set blur reduction and smoothing. This is useful, as IFC on its Mid and Max settings conjures motion artefacts. I'd rather see some horizontal panning judder than shimmering noise.

Heed this advice, and the 65DX902 proves mostly blow-your-socks-off brilliant. Fine detail and texture, colour performance and shadow subtleties are all superb. TV packages don't come much more premium ■

AV INFO

PRODUCT:
65in direct-lit Ultra HD TV

POSITION:
Panasonic's top-of-the-range LED set

PEERS:
Sony KD-65ZD9;
Samsung UE65KS9500

HCC VERDICT



Panasonic TX-65DX902

→ £3,000 → www.panasonic.co.uk

WE SAY: Panasonic's first Ultra HD Premium 4K flagship delivers amazing visuals, and a top smart experience, but the backlight isn't foolproof.

Samsung UE55KS7000

A great all-round 4K TV package that has **John Archer** saving his pennies

SAMSUNG'S MID-RANGE 55IN

TV clings on to the brand's 'SUHD' designation despite being one of its more affordable models. This means it delivers both Quantum Dot colour technology and an ultra-bright VA type panel, features which have proved key in producing outstanding HDR pictures in other Samsung sets. The promising tech is housed in a slim black-and-silver frame (flat, not curved) mounted on a gleaming pair of spindly feet. It's neat and tidy.

With the Ultra HD Blu-ray of *The Revenant* in all its 4K and HDR glory, the UE55KS7000 proves to be a class apart from most mid-range rivals. It's immediately obvious that it does well showing off the bright peaks and details key to a successful HDR experience. Both light reflecting off the rippling water as Glass stalks a deer, or sparks



floating into the night sky from a camp fire, look intense and vivid.

What's more, *The Revenant*'s endless naturally-lit outdoor sequences all look gorgeously life-like thanks to the TV's peak 1,000 nit capability. Samsung's QD display, meanwhile, paints eye-catching colours and

captures the subtle shifts in hue in more restrained areas. Skin tones and the flora and fauna of the great American wilderness look superb.

The most surprising strength is its handling of very respectable black colours. The overall dynamic range isn't as wide as on top-tier models, but as a positive, this means the TV's locally-dimmed edge LED system has less obstacles to overcome.

Occasional striping issues fade almost completely away with regular SDR material, and both native and upscaled detail is outstanding.

A convincing audio performance completes a mid-range TV marvel ■

HCC VERDICT ★★★★★

Samsung UE55KS7000
→ £1,100 → www.samsung.co.uk

ULTRA HD TV/£850

Panasonic TX-50DX750

John Archer discovers if a sub-£1,000 Panasonic TV can satiate his HDR desires

WHILE PANASONIC'S FLAGSHIP screens – the DX902 models and its curved CZ952 OLED in particular – garner the brand its most loving looks, it's never been afraid to cater for those on more everyday budgets. In the shape of the TX-50DX750, we have a 50in 4K HDR TV retailing for a reasonable £850. Neither a cheapie nor a high-end option, it's a set that will no doubt be on a lot of people's shortlists,

wooed by its Freeview Play tuner, 3D playback, funky Firefox-powered user interface and sleek design.

For images, the TV carries the brand's new Studio Master HCX video processing engine (but not the HCX+ version). This takes on special importance given the challenges involved with 'down-mapping' HDR's colour and brightness information to the screen's specifications (particularly its use of an 8-bit, rather than 10-bit, panel).

In this regard it does a better job than might have been expected. UHD Blu-rays exhibit good dynamics and a surprising amount of greyscale and shadow detail subtlety in dark areas. With HDR colour, the 50DX750 doesn't proffer the same richness of tone as expensive

rivals – blue skies and orange sunsets don't carry that same level of impact and colour depth, and there's more potential for gentle colour banding in skin tones and skies – yet everything still looks more richly shaded than the 1080p BD version.

Contrast from this edge-lit panel is fair, with light striping sometimes in evidence, particularly with CinemaScope content. With SDR material, though, niggles are less likely – black levels are deep and true and colours are crammed with subtle blends. In fact, its performance with SDR footage (which most will still be watching for much of the time) is genuinely excellent. 3D playback is a bit more middling, with enough crosstalk to take the edge off the image's sharpness ■



HCC VERDICT ★★★★★

Panasonic TX-50DX750
→ £850 → www.panasonic.co.uk

AVR850



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Anthem MRX 1120

Anthem's 11-channel AV flagship may not offer every toy, but it's a home theatre thriller nonetheless, raves a smitten **Steve May**

WHEN IT COMES to home cinema sound, the elephant isn't in the room. The elephant is the room. It's an inconvenient truth that no matter how good your multichannel sound system, the environment you listen in – and all those resonances and reflections – will have an inordinate influence on what you hear.

All major AVR vendors recognise this, employing a multitude of auto equalisation techniques to compensate – Yamaha has YPAO, Pioneer touts MCACC, Audyssey is offered by Denon and Marantz. These systems give variable results, but all use low-cost mics and are ultimately limited by the processing power resident in the receiver. Anthem Room Correction (or ARC), which comes with the MRX 1120, is rather different. And the impact it has on the audio performance of this receiver is remarkable.

The MRX 1120 is one of the few 11-channel AVRs around, able to support a 7.2.4 Dolby Atmos layout (a DTS:X update is pending) without recourse to extra amplification. If you don't need all that grunt in your theatre, a pair of the channels can be used in a second zone.

While this receiver can fill a full domestic Atmos room, it's more compact than you might think, thanks in part to a hybrid power arrangement. The four height channels and

two back channels are driven by Class D modules, while the main speaker array benefits from traditional Class A/B muscle. Power output is rated at 140W per channel (into eight Ohms) for the traditional five-channel bed, with 6 x 60W for up top and the rears.

For digital sources there are eight HDMI inputs (one on the front), with twin outs. HDMI 1-6 support 2,160p60 content including HDR, wide colour and HDCP 2.2. There's also ARC support and MHL for smartphone playtime. Anthem doesn't waste space with legacy inputs, but you will find five digital audio inputs (two optical, three coaxial), plus one optical output and five analogue stereo inputs. There are two subwoofer outputs, along with a full set of pre-outs. For integration, there's a 12V trigger and RS232 port, plus IP control (via Wi-Fi/Ethernet).

A front flap on the fascia conceals a headphone jack and USB – but the latter is only for software updates, not media playback. Ditto the USB around the back. Naturally the MRX 1120 has Wi-Fi built in, if you're unable to hardwire to a network.

It doesn't take long to realise that some features you might expect to find on a £4,000 AVR are absent here. Most importantly, there's no network file playback or

AV INFO

PRODUCT:
11-channel Dolby
Atmos AV receiver

POSITION:
Flagship in the
Anthem range –
there are seven-
and five-channel
MRX models, too

PEERS:
Arcam AVR850;
Denon AVR-X6300H

integrated music services. Owners are clearly expected to source them elsewhere, or make use of the AVR's DTS Play-Fi support to stream.

Out of the box, the MRX 1120 has three inputs assigned, plus FM radio and DTS Play-Fi. If these aren't required they can be deleted. Additional inputs can be created and assigned as needed – the receiver allows you to set up 30 in total. We're not talking physical inputs as such, more profiles which point to what's available. You can choose to have multiple inputs looking at the same signal, so a single Blu-ray player could actually feed any number of named inputs – home cinema, stereo, media player, etc.

Room correction can also be assigned on a per-input basis. Additional post-processing niceties include Dolby Volume, DTS Neo:6 and two proprietary Anthem modes. Dolby Surround is the *de facto* option for sonic upscaling.

You don't have to run Anthem's room calibration from the get go, as the AVR's text-based UI allows for speaker assignment and placement. But why postpone the fun?

ARC has been developed by Paradigm Electronics, Anthem's Canadian parent. It's designed to measure your listening room, with data captured by the supplied microphone. This can then be tweaked in a PC. Typically room correction would be carried out by the dealer who sells you the AVR, although you can run it yourself.

ARC is very powerful and exceptionally customisable. The MRX 1120 allows you to create four profiles, all with individual sonic characteristics. One might be for standard cinema listening, another might drop the subwoofer for late-night boxset binges. A third could be for two-channel only. Alternatively, you can create listening position profiles – perhaps covering various seating positions.

If you opt to run the software in automatic mode, little can actually go wrong. Sweep your system with Quick Measure to check everything's connected before getting stuck in. A minimum of five seating positions should be measured – although you can go to ten if you have a big room. Once analysed, you can study an uncorrected trace of every speaker, comparing raw data against a target curve. It's fascinating stuff, as you can see just what's happening in your listening room when it comes to nodes and anomalies. You can also use the insight to identify seating positions which suffer from a major room issue.

Note that with ARC there's no way to capture the distance of the microphone in relation to the loudspeakers, so that information has to be input manually.

Pressing 'calculate' then engages the power of your computer. Before you know it, every channel matches a target curve. Once crunched, the settings can be uploaded into the receiver and the data saved as a reference PDF.

Once you've done the EQ, you can print off a before-and-after document which shows all the correction performed, including your speaker's response characteristics.

Take my breath away

Anthem Room Correction transpires to be brilliant – the results of all this jiggery-pokery are breathtakingly good. Dialogue is perfectly delineated, front-stage imaging balanced and expansive. There's no unwanted emphasis or stridency, even with complex mixes like *Batman v Superman: Dawn of Justice*. The receiver simply juggles the disparate parts of the soundtrack with aplomb.

My fave Dolby Atmos trailer, *Amaze*, with its 360-degree bird flight and rich bass, causes me to giggle inadvertently. The LFE hits faster and harder than Superman in a hurry.

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes – via firmware update **THX:** No **POWER OUTPUT (CLAIMED):** 5 x 140W plus 6 x 60W (into eight Ohms) **HDMI:** 8 x inputs; 2 x outputs **AV INPUTS:** 5 x digital audio (2 x optical and 3 x coaxial) **ANALOGUE MULTICHANNEL INPUT:** No **MULTICHANNEL OUTPUT:** Yes. 11.2-channel processing **MULTIROOM:** Yes. Zone 2 **VIDEO UPSCALING:** No. Passthrough **DIMENSIONS:** 439(w) x 375(d) x 165(h)mm **WEIGHT:** 14.6kg

FEATURES: Anthem Room Correction kit including USB microphone; DTS Play-Fi streaming support; integrated Control4 support; Ethernet; Wi-Fi; FM tuner; USB service ports; 32-bit/768kHz DACs; iOS remote app; backlit remote control; HDCP 2.2 on six HDMI 2.0a inputs; HDMI standby bypass; Dolby Surround; DTS Neo:6; All-channel stereo mode; 4 x speaker profile memories

For sheer visceral thrills, few movies open with as much latent ferocity as *Mad Max: Fury Road*. An unapologetic V8 revs over the Village Roadshow logo, before soundbites detailing mankind's apocalyptic fate light up every channel in my 7.2.4 setup. A plaintive 'Where are you Max?' haunts the expanded soundstage before a wave of vehicles fly front-to-back. I expected to see plaster falling from my ceiling in celebration.

The MRX 1120 delights in the mix's sonic grit and debris, igniting explosive LFE. My head spins as the sound design takes me on a dizzying chase through underground tunnels. It sounds sensational – detailed, fulsome and breathlessly energetic. And that's just at -20dB. The MRX 1120 has more than enough fuel to power this road warrior.

Imaging is startling. When Pi first meets Richard Parker, in *Life of Pi* (DTS-HD MA 7.1), the lion pads purposely from the centre channel (eyes shut, I know exactly where he is). Later, when cast adrift, menacing waves lap around, the height channels feeding ambience stolen from the mix. And there's no noticeable discrepancy between the Class D heights and the traditional A/B bedrock. The entire system licks and pans with urgency.

This disc may not be native 3D audio but the sense of immersion is utterly convincing. In fact, for sheer accuracy the only system I've heard in my room that matches it used a Datasat RS20i processor, calibrated manually with Dirac Live – and that's the best part of £20,000 without amplification. Arcam's Dirac-carrying AVR850 is a more relative contender, but that's a seven-channel design only.

The MRX 1120 sounds great with stereo, too. A DSD rip (from Sony's PS-HX500 turntable) of the vinyl *Dresden* by UK Decay perfectly places Abbo's insistent vocals centre-stage; you can visualize him hunched in front of the drum kit, as flanking guitars jangle. Suddenly I'm back at the Greyhound in Fulham Palace Road, amidst proto Goths.

The Anthem MRX 1120 is a fabulous AVR, and Anthem's sophisticated room correction is astonishingly effective. Once dialled in, the receiver sounds beautifully precise and balanced. Soundtracks are tight and involving: bass is deep and granite hard, while dialogue remains crisp and articulate. While this AVR may not tick all the feature boxes of better-known competitors, it delivers absolutely where it counts. This is surround sound unbound ■

1. With its suite of 11 amplifier channels, the MRX 1120 supports 7.2.4 Atmos layouts

HCC VERDICT



Anthem MRX 1120

→ £4,400 → www.anthemavs.co.uk

WE SAY: This 11-channel AVR may be low on connected frills but it delivers a sizzling audio performance bolstered by the brilliant Anthem Room Correction system.

Yamaha RX-A3060

Yamaha's top-flight AVR has a bulging spec list and UK tuning.
Richard Stevenson brings his UK ears to the party



FROM HEADLINE ACTS like DTS:X decoding to Yamaha's MusicCast multiroom tech, the RX-A3060 is seriously loaded, and it doesn't lack for goodies underneath the lid, either. Yamaha offers 11.2-channel decoding/processing allied to nine channels of amplification rated at 150W (eight Ohm measurement). D-to-A conversion is handled by ESS's Sabre32 DACs; these devices are to hi-fi audiophiles what J.J. Abrams is to cinema fans. The amp's sound is further enhanced, says Yamaha, by its chassis engineering, which includes an H-shaped cross frame, centralised fifth foot and double-bottom construction.

The spec sheet can afford to have few omissions at this level, so 4K upscaling and HDMI 2.0a/ HDCP 2.2 support is a given. A suite of video processing features is also offered.

Yamaha's Compressed Music Enhancer function promises to breathe life back into lossy MP3s and Bluetooth inputs, while at the other end of the spectrum the High-Res music enhancer upsamples CD and FLAC files to 96kHz/24-bit. There's comprehensive zone

control for up to four zones, and a Party Mode that plays the same source in every zone. The AVR will also function within a MusicCast multiroom system.

The 11 sets of speaker terminals hint at more amplifier channels than there really are, yet affords

much flexibility in how you configure your system. Running 'Presence' channels, bi-amping the front end or using them as high-level outputs in other zones are all a possibility. Selecting from the options in the GUI is relatively easy thanks to clear diagrams.

It's a shame there aren't two more channels of power; enjoying a full Atmos/DTS:X experience with the RX-A3060 will require another stereo amp. It's not a deal breaker but it does stop it being a neat one-stop shop for 7.1.4 surround sound.

No Yamaha receiver would be complete without a raft of DSP modes and the RX-A3060 is no exception – there are no less than 27 different modes, from basement bars to classical concert halls for music, and from Sci-Fi to Sport for video sound.

The GUI and remote will be pretty familiar to anyone who has played with a Yamaha AVR over the last few years and that makes it feel a little dated. On the plus side, day-to-day control can be handled by the AV Controller app, which is visually appealing.

Hats off to yet another staggeringly good iteration of YPAO room EQ. Its simple setup routine belies its complexity in execution, delivering a channel balance and delay structure I didn't once tweak. For me, it was spot on, giving an even balance, solid bass without being OTT on the subwoofer channel and a big, enveloping sound.

Edge of Tomorrow's native DTS-HD MA soundtrack offers a superb mix of dialogue, atmospheric effects and voluminous audio sequences and the Yamaha delivered in spades. Through the battle scenes there is

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes **THX:** No
POWER OUTPUT (CLAIMED): 9 x 150W (8 Ohms) **HDMI:** 8 x inputs; 2 x outputs
AV INPUTS: 6 x digital audio (3 x optical and 3 x coaxial) **ANALOGUE MULTICHANNEL INPUT:** No **MULTICHANNEL OUTPUT:** Yes. 11.2 processing **MULTIROOM:** Yes. Zones 2, 3 and 4 **VIDEO UPSCALING:** Yes. To 2160p
DIMENSIONS: 435(w) x 192(h) x 474(d)mm
WEIGHT: 18.1kg

FEATURES: Built-in Wi-Fi and Bluetooth; Ethernet; Yamaha YPAO EQ; 27 DSP modes; ESS Sabre32 DACs; iOS/Android apps; Spotify; Napster; MusicCast multiroom

a good sense of three-dimensional action as the quad-copter drop-ships fly overhead – and this was without height channels in play. Bass is tightly controlled and even glassy high-frequency effects avoid being bright.

Tom Cruise's distinctive dialogue is accurately portrayed and there is a good sense of clarity and definition throughout every channel and effect. There's no one facet of the Yamaha's sound that steps ahead of the game. The RX-A3060 simply delivers a very good sound all round, and that makes for a very easy listen. I would like a little more space in the soundstage, perhaps a slightly edgier performance at the top end or perhaps bass that plays a little more fast and loose. That would give it much more character for sure, but would start to make it more of an AVR for AVR fans rather than movie lovers.

Adding four height channels, using another amplifier, necessitated another run of the YPAO setup. The result was more of the same great balance, only with greater 3D height, steering precision and soundfield size.

As for Yamaha's bespoke DSP modes (all with adjustable parameters for the likes of DSP gain, room size, initial delay and rear delay), I'm a convert. Using the Sci-Fi mode with *Edge of Tomorrow* felt like taking the safety catch off of the RX-A3060. The soundstage swelled in all directions and bolstered the acoustic ambience of scenes, from the intensity of being inside the drop-ship to the airy space of the hydro-dam. And the Yamaha doesn't do this at the expense of coherence, and there was none of the phasey colouration and echoey-weirdness I remember from DSP modes of old. Ignore this feature at your peril – this AVR certainly has sonic tricks up its sleeve... ■

AV INFO

PRODUCT: Networked nine-channel AVR with Atmos/DTS:X

POSITION: Yamaha's flagship AVR for 2016

PEERS: Pioneer SC-LX89; Arcam AVR550

HCC VERDICT



Yamaha RX-A3060

→ £2,000 → uk.yamaha.com

WE SAY: Yamaha's AVR offers features aplenty and a balanced sound that draws you into movies. Switch to DSP and it shoots to thrill, too!



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DM55



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Denon AVR-X2300W

Mark Craven cracks a smile while listening to Denon's budget Atmos offering



AVAILABLE FOR AROUND £500, Denon's AVR-X2300W offers buyers at this price everything they'll probably expect, all wrapped up in a neat design and delivered with an understanding that those investing in home cinema separates may still be AV novices.

It's a seven-channel Dolby Atmos/DTS:X receiver (claiming a 95W-per-channel – into eight Ohm – measurement). Auro-3D, while offered on more expensive Denon amps as a paid upgrade, isn't an option – not least because the X2300W doesn't have the channel output to do it justice.

The feature set is comprehensive. Ethernet/Wi-Fi and Bluetooth connections cater for audio streaming, with format compatibility

ranging from the prosaic (MP3) to the esoteric (DSD 5.6MHz). These are backed up by AirPlay, Spotify Connect and 'net radio integration. Room EQ is provided via Audyssey's MultEQ XT platform. There are dual outputs for twin-sub setups.

HDMI provision is bang up-to-date, too.

The amp features eight inputs (one front-mounted) and twin outputs, with HDCP 2.2 and 4K/HDR support across the board.

While not integrated with Denon's HEOS multiroom kit, running a second audio zone is an option.

The Denon does show some signs of corner-cutting. Firstly, while the overall aesthetic is pleasant enough, the central portion of the fascia is hewn from plastic. Then there are features missing that some buyers may want and will have to look for elsewhere, such as multichannel analogue inputs and Denon's proprietary Link connection standard.

The AVR can be controlled via a free app, or the supplied handset. The latter is lightweight and generally free of clutter. There are source keys for Blu-ray, CD, etc – as opposed to the once-typical HDMI 1, HDMI 2 and so on. In theory, this makes it easier for casual users to drive the Denon, but depends on you actually hooking up the right gear to the right input. Thankfully, Denon's Setup Assistant guides you easily through installation.

All aboard the Denon express

The AVR-X2300W, given the enormous drama of *Unstoppable*'s DTS-HD MA 5.1 mix and a Monitor Audio MASS speaker array, proves to

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Via firmware update **THX:** No **POWER OUTPUT (CLAIMED):** 7 x 95W (8 ohms) **HDMI:** 8 x inputs; 2 x outputs **AV INPUTS:** 3 x composite video; 2 x digital audio (2 x optical; 0 x coaxial); **ANALOGUE MULTICHANNEL INPUT:** No. **MULTICHANNEL OUTPUT:** No **MULTIROOM:** Yes. Zone 2 (audio) **VIDEO UPSCALING:** Yes. To 2160p (HDMI inputs only) **DIMENSIONS:** 434(w) x 167(h) x 339(d)mm **WEIGHT:** 9.4kg

FEATURES: Built-in Wi-Fi and Bluetooth; Ethernet; Audyssey MultEQ; HDCP 2.2; hi-res audio playback (DSD, FLAC, ALAC, AIFF, WAV); Pure Direct; AirPlay; Spotify Connect

be a little receiver with big ambitions.

It creates a fulsome soundfield packed with clanking metal, screeching wheels and pulsing score, chewing up the soundmix with gusto and sounding lively and unrestrained.

In this regard it's rather addictive, steering clear of sounding dry and analytical, and not veering towards high-frequency impact at the expensive of solidity lower down the frequency range.

In the Tony Scott flick, when the runaway freight train hurtles through a level crossing, the Denon paints a tense sonic picture. Barking dogs and bird song give way to a tremendous impact as a truck clatters into a horsebox. And as the train approaches the crossing, the soundtrack swells, ratcheting up the drama. Another bass-heavy transient later, and my listening room is filled with the sound of a train shunting through, right to left. It's explosive stuff presented with clarity and an ear for detail.

Audyssey here offers three flavours – Reference, L/R Bypass, Flat – plus off. It pays to experiment. I found I preferred the L/R Bypass mode, which left my front speakers unfettered, to the default Reference setting.

Image steering is head-whippingly fun. With the Atmos soundmix of *Sicario*, the soundfield is awash with well-placed effects, not least bullet-fire that zips front-to-back. The Denon lifts these out of the mix, while smaller details – falling bits of masonry, footsteps in the sand – plus the repetitive, foreboding score, round out the soundscape. And there's enough dynamic impact to make this shootout a believable experience. It's not a power-house, but it's not an AV waif, either.

Budget buyers after a 7.1 amp to handle their next-gen sources should give this a whirl ■

HCC VERDICT



Denon AVR-X2300W

→ £500 → www.denon.co.uk

WE SAY: Easy to use and packing the key features, Denon's mass-market AVR presents soundmixes with panache. One for your shortlist!

AV INFO

PRODUCT: Seven-channel Atmos AV receiver

POSITION: Lower/mid-range – high-end AVR-X models add HEOS integration

PEERS: Pioneer VSX-1131; Yamaha RX-V581

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Arcam AVR850

Jon Thompson believes Arcam plus Dirac Live EQ is a match made in Dolby Atmos heaven

THE HOME CINEMA industry has been in something of a rut since the financial meltdown of 2007, with gaping holes where much of the high-end market used to be. But Arcam's latest integrated AV receiver has me thinking we may be seeing the light at the end of the tunnel.

This English company, famous for its hi-fi equipment, threw itself back into AV in a big way with the AVP950 (processor) and AVR750 (receiver) a couple of years ago – both very solid-sounding devices, top-notch in their price bands. It then launched the well-respected UDP411 Blu-ray player, and follows it with the AVR850 on test here. And this is no mere upgrade on the AVR750 – it's a different beast altogether. And Dolby Atmos is partly responsible.

Times have changed in the world of cinema audio. Atmos has introduced all those channels and speakers, and timbre-matching becomes a real issue. Handy, then, that in 2003 Dolby purchased Australia-based Lake Technology Limited, which had produced an audio correction system that could apply a real-time EQ to give a uniform timbre. Dolby was thinking way ahead; old-school parametric EQ was no longer up to the job.

But when Atmos was launched domestically, Dolby Lake processing stayed behind closed doors. So what's the

alternative? Dirac – a high-end EQ system from a company founded 15 years ago by professors and Ph.D. students at Uppsala University. Essentially, Dirac's multichannel EQ is very similar to Dolby Lake. It appeared on Datasat's premium RS20i processor a couple of years ago, and now finds its way into Arcam's flagship AV receiver. The promise is multichannel sound of unrivalled accuracy.

In a Class G of its own

At £4,500, the AVR850 is the most expensive integrated amp on the market that I can think of, more expensive than high-end processors from the likes of Marantz and Onkyo. It uses Arcam's traditional audiophile Class G power amps, here rated at 100W-per-channel.

Excavate the AVR850 from its box and you'll discover it's fairly heavy (16kg) and offers the typical Arcam design. There's a big volume knob in the middle of its fascia with basic function buttons arranged either side. The finish is a nice matt black and the build seems solid. It'll look particularly good racked with other Arcam hardware.

There's an array of rear-mounted inputs, but perhaps not the forest you might expect. Connections include seven HDMI inputs, at the 2.0a spec and with HDCP 2.2 support.

AV INFO

PRODUCT:

High-end 7.1-channel
Dolby Atmos AVR

POSITION:

Arcam's flagship
integrated AV amp

PEERS:

Yamaha CX-A5100/
MX-A5000;
Marantz AV8802A

There are no analogue video inputs at all, but I doubt that's an issue for anyone. There are three HDMI outputs – two for a dual-screen system and one for a second video zone.

Adjacent to the row of chunky speaker terminals sits a 7.1 compliment of phono preamp outputs should you want to use the AVR850 as a processor only. Above these are four extra phono outputs labelled for height channels, which is an indication of one of the AVR850's limitations – this is only a seven-channel amp. Extra power amps are required if you want to run any Atmos array beyond 5.1.2. This is not an out-the-box full-fat Atmos solution.

IR, RS232 and 12V ports cater for advanced system setup. There is an Ethernet port, but no Wi-Fi. A DAB/FM antenna socket, USB port and a 6V accessory output complete the rear-panel deal. Only headphone and 3.5mm inputs reside on the front fascia.

This AVR is like most of its high-end brethren – it's all about audio and on the video side offers switching but nothing more. Yet there's nothing wrong with this as the video processing options on mass-market receivers can often make pictures look worse than they should.

Switch on the AVR850 and you'll immediately discover an area where Arcam could make improvement. It's purely cosmetic and has no effect on sound or image quality, but the main menu looks like a bit like a 1990s BBC engineering page. It's easy to read and functional – initial setup is straightforward and easy to do – but in no way slick or sexy.

I began by listening to the AVR850 in stereo. If a processor can't do a good job in stereo mode it won't have a hope in hell in multichannel. CDs played via the coaxial and then analogue inputs impressed – the Arcam showed pace and rhythm; timing seemed spot on and the created soundstage was wide and deep. My one complaint, music-wise, is that the headphone jack is 3.5mm.

Away from physical media, the AVR850 doubles as a network audio player. Arcam's iOS MusicLife UPnP/control app is good and responsive, and will connect to audio servers to dig out your collection of hi-res and MP3 audio files. There's no DSD support, however.

As for home cinema multichannel, the unit supports DTS, Dolby TrueHD and Dolby Atmos off the shelf. DTS:X has been added via a firmware upgrade; Auro-3D is absent.

AV bake off

The AVR850 is sonically a *tour de force*, and the icing on the cake is Dirac. This analyses your room, listens to each speaker, looks at its characteristics and presents them in a graph. The longer you spend measuring – the more points you analyse – the better correction you'll get. Eight to 12 points seems to give you a nice result in an average-sized theatre. You can just do one if you want, but Dirac's understanding of the issues in the room will be limited.

Once you have all your analysis data, this is sent via the 'net to Dirac's mainframe computer along with the output curve that you would like as a target. It then throws more Petaflops than you need to know at it and sends a correction curve that the AVR850 can apply to all the speakers to produce an almost perfect response. Phase and time alignment are all part of the package.

And it can tune your subwoofer too. A room can have more of an effect on a sub than we often realise. Dirac's analysis of mine revealed it was offering a very narrow band of energy, overpeaking at around 70Hz, producing a lot of bang but not much crash. Using Dirac I tuned it to produce a near-flat response from 20Hz-100Hz. The difference

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Yes – via firmware upgrade **THX:** No **MULTICHANNEL INPUT:** Yes. 7.1 phono audio inputs **MULTICHANNEL PRE-OUT:** Yes. 7.1 pre-outs, plus four Atmos channel pre-outs **MULTICHANNEL OUTPUT (CLAIMED):** 7 x 100W (into 8 ohms) **MULTIROOM:** Yes. Second AV zone **AV INPUTS:** 6 x digital audio inputs (4 x coaxial, 2 x optical) **HDMI:** Yes. 7 x inputs; 3 x outputs **VIDEO UPSCALING:** No **DIMENSIONS:** 433(w) x 425(d) x 171(h)mm **WEIGHT:** 16.7kg

FEATURES: Dirac Live for Arcam room EQ/setup; Ethernet; USB; 3.5mm input; 6 x stereo analogue audio inputs; networked media playback (incl. FLAC, MP3, WMA, WAV, AAC); DAB/FM tuner; internet radio; Class G amplifier design; twin subwoofer outputs; iOS control app; RS232; 2 x 12V triggers; 2 x IR inputs; learning remote control; Spotify Connect

became staggering; the whole system not only sounded much more integrated but with greater body and LFE detail.

I went one stage further and used three different speakers from three manufacturers across the LCR stage, all with their own unique timbre. I let Dirac see if it could match them, and it did, taking a trio of speakers and making them sound the same. Not in a bad way, either: they sounded how you would want them to.

Calibration complete and with the Arcam front-lining a 7.2.4 Atmos array, it proved to be the closest I have heard a home cinema come to sounding like a pro theatre. My still-favourite demo disc – *John Wick* on Blu-ray – was a delight. The nightclub sequence is painfully good as you can hear all the details of the violence (slicing blades, tinkling shell-casings) and the powerful impacts of the numerous handguns. Effects-steering was first rate. The musical soundtrack shone, too, with the Arcam letting you hear the contrast between the booming club and private rooms.

Next I spun the US remaster of *The Fifth Element*. This is another essential disc, in both image terms and the Atmos mix. Pick any sequence and it engages. During the taxi cab chase, Bruce Willis' quippy dialogue sounded perfectly placed and balanced amidst a world of aural chaos.

Sicario offered reference-grade audio. The Arcam unwrapped its taut, atmospheric soundtrack with supreme accuracy and no shortage of power, giving everything from the pulsing score to a helicopter flypast depth, believability and clarity. When Agent Mercer descends into the cross-border tunnel, the eventual firefight featured exquisite detail placement and sudden dynamic bursts.

Switch Dirac off and you are at the mercy of your speakers and room acoustics. Bass response in particular sounded weaker, as if it had been muzzled, and the soundfield came across as less cohesive and balanced. It was still good – the AVR850 at its core has power and poise – but it was no comparison to the system with Dirac in play.

To sum up, if you need a Dolby Atmos/DTS:X AV receiver, and want the best around, this is most probably it. Arcam has made a smart move teaming up with Dirac instead of less-potent EQ systems, and with its stunning Class G power amps, Arcam's sonic know-how and futureproofed HDMI stage, this is a scintillating upgrade ■

1. The AVR850 is styled to match other products in Arcam's FMJ range

HCC VERDICT



Arcam AVR850

→ £4,500 → www.arcam.co.uk

WE SAY: Sonically immaculate, with Dirac EQ the perfect partner to Arcam's muscular amplification. Classy design and build. Only seven power channels, but it'll process up to 11.

Denon AVR-X4300H

Dolby Atmos and DTS:X? Multiroom streaming? Hi-res audio? Welcome to the future of AV, says **Steve May**



DENON HAS A tendency to lead the way when it comes to codecs, and that's certainly the case here. The nine-channel AVR-X4300H features Dolby Atmos and DTS:X decoding, with an option (£149) to upgrade to Auro-3D early 2017. If you're looking for a full slate of 3D systems, you've come to the right place.

But there's much more to the AVR-X4300H than 360-degree surround sound, as that suffix denotes. H is for HEOS, Denon's wireless multiroom audio platform. This is the first time we've seen native support for HEOS built in to an AV receiver, and it rocks. Before now, owners had to go through the faff of adding an outboard HEOS pre-amp to achieve the same. For those intrigued at the possibility of

integrating whole-home audio with a cinema system, HEOS could be a killer app – especially as Denon is offering buyers a free HEOS 1 speaker for a limited time.

Design and connectivity are first-class. The X4300H is reasonably hefty, with a copper-plated chassis and

mono-block build. There are eight HDMI inputs, and all support HDCP 2.2 devices with 4K/60Hz passthrough. There are also three HDMI outputs. A typical user case might see both a TV and projector fed in a main cinema room, with the third HDMI devoted to Zone 2.

There's no multichannel analogue audio input here, which would have been nice for owners of DVD-A/SACD disc-spinners, but owners of Denon's DBT-3313UD Blu-ray player can take advantage of the Denon Link HD coaxial link to reduce jitter.

The AVR is 'net-savvy, of course, and getting online is quick and efficient. The receiver supports Wi-Fi and Bluetooth.

Denon rates power output at 9 x 200W (into 6 Ohms), and there's demonstrably decent grunt onboard. While a nine-channel design, there's also processing (and pre-outs) for 11.2 if you want to add extra amplification.

Multiroom maestro

Having HEOS onboard is quite a hoot. Play a CD on your Blu-ray deck, select that input as the source on the AVR through the HEOS app, and you can Party Zone the music through both your cinema system and HEOS speakers. Similarly, you can also share movie soundtracks, although Dolby/DTS bitstreams do play out-of-sync with HEOS speakers.

SPECIFICATIONS

DOLBY ATMOS: Yes. **DTS:X:** Yes. **THX:** No. **POWER OUTPUT (CLAIMED):** 9 x 200W (into six Ohms). **HDMI:** 8 x inputs; 3 x outputs. **AV INPUTS:** 4 x digital audio (2 x optical, 2 x coaxial); 4 x composite video; 2 x component video. **ANALOGUE MULTICHANNEL INPUT:** No. **MULTICHANNEL OUTPUT:** Yes. 11.2 pre-outs. **MULTIROOM:** Yes. Zones 2 & 3. **VIDEO UPSCALING:** Yes. To 4K. **DIMENSIONS:** 434(w) x 389(d) x 167(h)mm. **WEIGHT:** 13.5kg.

FEATURES: HEOS multiroom support; ISF calibration; iOS/Android apps; Audyssey MultEQ XT32 room EQ; Denon Link HD; Ethernet; Wi-Fi; USB; FM tuner; dual subwoofer output; Auro-3D upgrade path.

When it comes to movies, this AVR obviously has the wherewithal to be properly seismic, but Dolby Atmos isn't just about blowing the roof off your room, it can raise the dead too. High-class chiller *The Conjuring 2* offers a marvellously Atmos-pheric listening experience, with an unsettling score that sells the benefits of 3D mixing.

When the hapless coppers come to check out the otherworldly disturbances in Enfield, the Denon renders the discordant strings in the soundtrack with relish and body. And despite the cacophony, the receiver never sounds screechy or overwrought.

Steered around and through Dolby upfiring, the realism of the soundstage becomes deeply scary, sending tingles up my spine.

Multichannel imaging and transient delivery are excellent – the AVR-X4300H showcases a knack for speed and precision. As ghostbuster Ed Warren tries to persuade the spectre of Bill Wilkins to come forth and talk (Chapter 8), there's a disconcerting ripple of creaks and groans around the room. Rain pitter-patters in the Atmos channel, before what sounds like heavy footsteps thump on floorboards one floor up.

The X4300H is clean and transparent, perhaps more than you might expect from a Denon AVR – in the past they've veered towards richness and warmth. This gives the receiver a crisp smoothness that's particularly effective with electronica and jazz.

As for hi-res music, file support is on the money, with the X4300H even unspooling DSD in both 2.8MHz and 5.6MHz flavours. It'll also refresh MP3s and WMAs through its Compressed Audio Restorer function. But really, why slum it when it sounds this good? ■

AV INFO

PRODUCT: Nine-channel AV receiver

POSITION: Denon's newest nine-channel model, below the 11-channel AVR-X6300H

PEERS: Onkyo TX-RZ1100; Pioneer SC-LX801

HCC VERDICT



Denon AVR-X4300H

→ £1,300 → www.denon.co.uk

WE SAY: This exciting nine-channel behemoth is a 3D audio thriller, and the integration of HEOS multiroom support provides welcome frosting.

Pioneer VSX-1131

Another contender for the budget AVR crown appears on **Mark Craven's** radar

PIONEER'S MASS-MARKET

power-pusher features more HDMI inputs than you'll ever need (okay, seven), dual HDMI outputs, 4K support to 4:4:4 at 60p, HDR passthrough and the networking trinity of Ethernet, Wi-Fi and Bluetooth. Indeed, it's an AVR with music streaming very much on its mind – Google Play Music, Spotify, Deezer, Tidal and TunesIn all make the spec sheet, plus hi-res playback of FLAC, ALAC, WAV and DSD.

Of the more home cinema-oriented features, topping the list is Atmos decoding, allowing you to run a 5.1.2 setup via the AVR's seven Direct Energy amplifiers. The latter are rated at an eye-watering 160W-per-channel. Don't expect that much grunt in real-world multichannel conditions.

A welcome design refresh concerns the remote. I've found Pioneer AVR handsets in



the past to be horrid, complex affairs. This is severely stripped back and much easier to use. The menus are new too, with neat graphics and a slicker appeal than before.

The amp's iteration of Pioneer's MCACC EQ produced some iffy results in my room, so manual adjustments were required. Despite this hiccup, the VSX-1131 performs well, with a predilection for bass punch and precise effects. With *The Equalizer* it revels in Denzel

Washington's brutal takedown of Ruskie baddies, offering a well-marshalled combination of sickly, flesh-tearing sounds and zippy gun reports. Later, our hero blows up a tanker ship and a slo-mo fireball rolls through my room with remarkable LFE wallop and undulation.

Next to this robust low-end and powerful presentation, the amp can feel a little light

on mid-range drive and articulation. With music it feels more at home with percussive beats than delicate instrumentation.

Not the most nuanced sound around, then, but not lacking in excitement either ■

HCC VERDICT



Pioneer VSX-1131

→ £550 → www.pioneer-audiovisual.eu

AV RECEIVER/£600

Marantz NR1607

This slender receiver continues to benefit from relentless refinement, says **Steve May**

THE NR1607 IS the latest flag-bearer for Marantz's slim-line range, and combines a rich vein of feature functionality (Atmos/DTS:X decoding, the latest HDMI input spec, hi-res audio), with decent sonic chops, in a form factor that won't crowd out your equipment rack... or break the bank.

An upper-budget seven-channel design, the 7 x 50W power plant isn't enormous in the scheme of things, but remains potent enough for the average living room. Audyssey's entry-level MultEQ suite is on hand to fine-tune system setup.

If you're a long-term home cinema fanatic, the appeal of Dolby Atmos and 4K might have you hankering to upgrade for the first time in years. How big a sacrifice would you make opting for the NR1607 thin-ema over a vintage volume monster? Rather less than you might think. Performance is, at times, genuinely bombastic. With Atmos mixes, the AVR creates a grin-inducing soundfield with a wonderful sense of steerage. It's a crisp, clean and lively performance. Meanwhile, Morgan Page's club track *Against The World* (DTS:X) dispenses high energy from every channel

– there's insistent high-hat and chorus in the heights, pounding synth to the rear and vocals locked dead centre.

When the Marantz needs to, it can hit hard and fast, although it will struggle to drive larger theatres; it just doesn't have the power reserves to fill a cavernous space – and I really don't think every drop of onboard juice is usable. Creep above 80 on the numerical volume gauge and the mid-range becomes Sahara-dry. I suspect most users will never need to crank the system that high, though.

Claims that the NR1607 has been retuned largely stand up; this is a supremely confident-sounding AVR, particularly with quality source material, and no way inferior to slim-liners that have come before. The mid-range is way more mellifluous than the mid-range price ticket might suggest. A worthwhile update ■



HCC VERDICT



Marantz NR1607

→ £600 → www.marantz.co.uk



KEF The Reference

Adam Rayner falls in love with KEF's high-end 7.2 loudspeaker system

IN 1961, RAYMOND Cooke took over the Nissen hut used by wartime company Kent Engineering & Foundry in Maidstone and started to produce loudspeakers that were branded KEF. And the rest, as they say, is history – the company has become an industry stalwart and the visionary speaker designer's awesome body of work has been imitated by others.

Its current Reference range launched in 2014, but at first was a hi-fi proposition only. Production of the all-important centre channel speakers didn't begin in earnest until after KEF had satisfied the demands of those who had pre-ordered its floorstanders and standmounts.

For this review, I had to head to Maidstone because KEF's Reference speakers – especially those here – are sizable enclosures, and wouldn't have been feasible in my abode. I've made similar trips to listen to Focal's Utopia range and a JBL Synthesis system. As always, I must stress that my listening took place in a professionally treated room – a room, in fact, that now houses four of the best-selling KEF Ci200RR-THX in-ceiling speakers (£475 each). This is like a shop ceiling speaker, in the way that a moped is to a Maserati, and did an astonishing job of

putting the lid on the Atmos system I was to experience. But more on that later.

What I had to listen to was a sumptuous statement of loudspeaker luxury. The revamped KEF Reference speakers are objects of profound craftsmanship taken to artistry, and with a classic look that belies the intensively-developed and human-ear tested research under each shiny exterior.

They come in choices of finish so pretty it'll be a struggle for buyers to pick one. Our sample is an ultra high-gloss Piano Back (with silver fronts). Then there are pair-matched veneers of Satin American Walnut or Luxury Gloss Rosewood, plus Blue Ice White and Copper Black Aluminium editions – which redress the front face, too.

The array here is probably the most premium that KEF can assemble and anyone would ever install. It comprises a pair of the £10,500-per-pair Reference Model 5 towers on front left/right duties, with the behemoth that is the Reference Model 4c as the centre channel enclosure. Reference Model 3s are used as surround and rear channels.

As befits a high-end setup, there are two subwoofers (the Reference 8b); each employs dual 500W amplifiers and twin 9in bass drivers arranged in a bipolar

AV INFO

PRODUCT:
High-end 7.2
loudspeaker array

POSITION:
The Reference is
– unsurprisingly –
KEF's flagship home
cinema product line

PEERS:
Monitor Audio
Platinum II;
Bowers & Wilkins
800 Series Diamond

configuration. As far as premium subs go, they appear almost petit, yet weigh in at 35kg each.

A fantasy system, then, yet KEF's Reference range certainly allows for scaled-down setups for those with smaller rooms and budgets. Use the Model 3s up front, opt for the smaller 2c centre, a pair of Model 1 bookshelf speakers for the surrounds and a single 8b woofer and you'd arrive at a 5.1 system still of serious potential.

The same two (well, three) transducers are used all around the range, which brings with it benefits in tonal cohesion. The 11th-generation Uni-Q has a 1in aluminium tweeter at its centre with a 5in midrange transducer in perfect synergistic harmony; the high-frequency unit using the rest of the driver assembly to disperse its sound coming from the tangerine wave guide. And this acoustic science is at the heart of each speaker – literally, when you consider where the Uni-Qs are sited on the front baffles.

The loudspeakers then wear one, two or four of KEF's new 6.5in bass drivers. Again, these use aluminium for its rigid and light properties, and the shallow discs attach to their large diameter voice coils via a vented coupler, an innovation trickled down from KEF's Blade speaker.

Performing like paragons

So what's it like? How can a speaker system cost forty-thousand pounds? By using objects crafted with exquisite attention to detail; by having huge man-hour counts under their phenolic resin composite baffles; by having every single part listened to as well as electronically modelled before construction; and for performing like paragons.

I called up the opening sequence from Angelina Jolie's Dolby Atmos-flavoured war-tinged drama *Unbroken*, where the American bomber planes encounter 'ack-ack' fire and a swarm of Japanese Zero fighters. The experience was of surround sound power and impact the like of which I have never heard before. I have felt louder, even though this setup was able to go to extreme levels, yet the sheer insanity of the dynamics was linked to a beauty and poise. With *Unbroken*, the anti-aircraft fire was terrifying, the Zeros' bullets whizzing through the air were divorced from any cabinet locational cue and I ducked a few times involuntarily. I was more 'there' in the action than I'd ever imagined. The soundfield just wasn't coming from the Reference speakers – it was literally all around me.

It's the kind of performance that really immerses. For instance, when the Zero flies at and underneath you, past the broken bomb doors and strafing as it comes, I all but leaped off the comfy sofa, lifting one knee off the floor in case I got shot.

A comparison of the full Atmos system versus 5.1 was insightful – the 'flat' system still impressed with a level of performance that any owner would be happy with. KEF's Reference models dig out detail so epic that you'll hear things in soundmixes you hadn't been aware of.

Back at 7.2.4, and Alfonso Cuarón's *Gravity* further proved the system's high-end merits. This film frightens me, over and over, and from its very beginning in Atmos it's literally breathtaking. Most of you will know the sequence. It starts in orbit, with a text crawl about how sound doesn't travel in a vacuum, accompanied by a crescendoic swelling tone that gets bigger and bigger and stops abruptly, leaving just radio chatter from the astronauts that we're drawing closer to. That overall 'whoosh' of lossless audio gets far louder than you think it will and there's always the danger of the soundstage seeming congested, and the speakers

SPECIFICATIONS

Reference Model 5

DRIVE UNITS: 1 x Uni-Q driver array (1in aluminium dome tweeter and 5in aluminium midrange); 4 x 6.5in aluminium bass drivers **ENCLOSURE:** Three-way, rear-ported **FREQUENCY RESPONSE:** 40Hz-35kHz **SENSITIVITY:** 90dB **POWER HANDLING:** 400W **DIMENSIONS:** 1,397(h) x 349(w) x 470(d)mm **WEIGHT:** 60.2kg

Reference Model 4C

DRIVE UNITS: 1 x Uni-Q driver array; 4 x 6.5in aluminium bass drivers **ENCLOSURE:** Three-way, rear-ported **FREQUENCY RESPONSE:** 48Hz-35kHz **SENSITIVITY:** 90dB **POWER HANDLING:** 400W **DIMENSIONS:** 1,090(w) x 205(h) x 470(d)mm **WEIGHT:** 45.2kg

Reference Model 3

DRIVE UNITS: 1 x Uni-Q driver array; 2 x 6.5in aluminium bass drivers **ENCLOSURE:** Three-way, rear-ported **FREQUENCY RESPONSE:** 43Hz-35kHz **SENSITIVITY:** 87.5dB **POWER HANDLING:** 300W **DIMENSIONS:** 1,202(h) x 349(w) x 470(d)mm **WEIGHT:** 51.3kg

Reference Model 8b (Subwoofer)

DRIVE UNITS: 2 x 9in aluminium long-throw woofers **ENCLOSURE:** Sealed, bipolar **FREQUENCY RESPONSE:** 24Hz-160Hz **ONBOARD POWER:** 2 x 500W Class D amps **REMOTE CONTROL:** No **DIMENSIONS:** 365(w) x 398(h) x 429(d)mm **WEIGHT:** 35kg **CONNECTIONS:** Phono input; phono output; XLR input; speaker-level inputs

making a general row. But the Reference resolved this tricky audio without the harshness that hard domes can do, and with the snap and dynamic attack that seemingly only massively-gripped aluminium cones can manage. These drivers can stop hard, and leave you gasping.

And then there was the wittering of Houston and George Clooney and Sandra Bullock. Crystal-clear but slickly located behind me and to the right, before the POV moves in a manner to emulate how nauseating free-fall actually is and the sounds of the radio operators swirl around seamlessly. The soundfield, with those floorstanders attending behind me, was seemingly gapless.

So while the scale of the system seems without limit, sonically everything is utterly clear and clean, and capable of brilliant intimacy. Moving to a gunplay-heavy sequence from *Jupiter Ascending* also bore that out. Copious detailing and massive impact were in evidence at the same time.

The bottom end is abused by *Gravity*'s sound designers, with use of huge bassy tones to add fear. The 8b subs come into their own here. Rated to reach comfortably down to 18Hz, they exude depth, scale and slam. Yet perhaps the best test of the system's overall low-end output was not the fear-inducing LFE wobbles that Hollywood is so in love with, but rather the control, leading-edge accuracy and speed required to deliver the performance of an acoustic jazz bass. *Legends of Jazz* on Blu-ray is a great platter for these occasions, specifically Jane Monheit performing *They Can't Take That Away From Me*. The recording was simply beautiful to listen to. The musicality of these speakers and their almost invisible nature will delight any audiophile, and that bass was cohesive, rich and taut.

This is British surround high-fidelity at the utter state-of-the-art. And it's easily worthy of its Reference name ■

1. The Reference Model 5 towers use a foursome of 6.5in bass drivers

HCC VERDICT



KEF The Reference 7.2

→ £38,000 → www.kef.com

WE SAY: If you want true top-end performance and to own loudspeakers that exhibit skilful craftsmanship and design, then these are a new high. And you can spec a smaller setup...

ATC SCM7 5.1

Audio whizz ATC develops a new centre speaker, giving **Ed Selley** a great excuse to get in a whole set



SOME SPEAKER BRANDS make a point of releasing and updating products on a regular basis while others unveil new equipment roughly as often as we are visited by comets. ATC is firmly at the celestial visitor end of this equation so a new speaker is big news.

The new model is the CIC centre. ATC has centres in its range already, but the CIC has been developed to partner the company's SCM lineup – specifically the 7 and 11 standmounts. To ensure a good tonal match, the CIC uses a pair of the same 5in midbass drivers that reside in the SCM7, partnered with the company's 1in soft dome tweeter that's used across the whole SCM range. All drivers are made by ATC and exude a ruggedness that suggests they'll take anything you throw at them.

As it has been designed with a view to working with the SCM7, we've selected that speaker for front/surround duties. These are the smallest stereo model that the company manufactures, and as ATC does not use bass ports in the SCM range, it means that while they have an even performance across their frequency response and seem unfussy about placement, they bottom out at 60Hz, which is pretty high even by the standards of a speaker of this size. This is where the 12in C1 Sub comes into play.

The C1 Sub is rather clever. All controls are accessible by jog dial and supplied remote, and set via a front-panel display (which can be dimmed/switched off). This is instead of peering around the rear panel trying to read switches upside down.

Virtuous performance

This is a supremely revealing set of speakers. With *Big Hero 6*, the film's giant waves of microbots are a treasure trove of individual detail. The ATCs capture the sense that onscreen is a mass of millions of individual units and not a single object. They then have capacity in reserve to move dialogue and the frantic whine of an escaping minivan around the room with pin-point precision. These are speakers that seem to take it as a point of honour that no detail of the soundtrack, however trivial, is to be omitted. This makes the CIC a joy for dialogue. If you are supposed to be able to understand what someone is saying on screen, this is a speaker that will ensure you do.

With identical drivers across the SCM7 and CIC, handover between the enclosures is extremely good, as you might expect. Even judged by demanding standards though, the CIC is an astonishingly close match to the standmount, and the result is an exceptionally smooth and well-integrated front soundstage. There's a gorgeously uniform tonality from the whole array, too.

With a Yamaha RX-A3040 as the back end, this SCM7 package goes effortlessly loud. The climactic storm drain sequence in *Into the*

SPECIFICATIONS

SCM7

DRIVERS: 1 x 5in midbass driver; 1 x 1in tweeter **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 60Hz-22kHz **SENSITIVITY (CLAIMED):** 84dB **POWER HANDLING:** 300W **DIMENSIONS:** 174(w) x 300(h) x 215(d)mm **WEIGHT:** 7.5kg

CIC

DRIVERS: 2 x 5in midbass drivers; 1 x 1in tweeter **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 57Hz-22kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 300W **DIMENSIONS:** 410(w) x 161(h) x 280(d)mm **WEIGHT:** 12kg

C1 SUB (SUBWOOFER)

DRIVERS: 1 x 12in woofer **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 18Hz-250Hz **ONBOARD POWER:** 200W **REMOTE CONTROL:** Yes **DIMENSIONS:** 360(w) x 410(h) x 360(d)mm **WEIGHT:** 24kg **CONNECTIONS:** Stereo phono input/LFE input; speaker level inputs

Storm is a cacophony of wind, water, debris and senseless dialogue. The ATCs deliver it with a genuine sense of pressure in the room, but steer clear of hardening up. It's the kind of refined sound that you might expect from a brand with a musical bent, but don't confuse that with a lack of excitement.

Once you've finished thrashing them, you can drop the volume, return to watching something innocuous on Netflix and the ATCs will uncomplainingly deliver the goods. A lower level doesn't equate to less sonic assurance. The clarity with dialogue and tonal accuracy remain.

Amongst all this relentless positivity, what little can be said against the ATCs mainly concerns the woofer. Compared to the speakers, the C1 Sub is not as much of a show-stopper. There's nice integration with the SCM7s, and the detail and cohesion that the speakers possess is matched here, but there are unquestionably rivals at a similar price (£1,300 when bought individually) that can slam a little harder. It does drop remarkably deep, though.

A caveat to this is that a partnership of two SCM7s and C1 Sub makes for a wonderfully revealing and insightful 2.1 system. Listening to a 16-bit/44.1kHz FLAC rip of Leftfield's *Bad Radio*, the sub's slight lack of final LF punch is overshadowed by its breathtaking speed and agility ■

AV INFO

PRODUCT:
5.1 standmount speaker system

POSITION:
The SCM range is ATC's entry-level offering

PEERS:
Spendor S3/5R2 5.1
PMC Twenty.22 5.1

HCC VERDICT



ATC SCM7 5.1

→ £3,250 → www.atcloudspeakers.co.uk

WE SAY: A triumphant multichannel package that combines detail, power and authority. Beautifully built and easy to accommodate.

ELAC Debut

ELAC's well-priced Debut series mixes traditional speakers with Atmos modules. **Ed Selley** lets fly with *Mad Max*



HOME CINEMA
Choice
BEST BUY

ELAC'S DEBUT SERIES comprises two floorstanders, three standmounts, a centre, no less than three subwoofers and – most importantly for a surround speaker package in 2016 – an upward-firing Dolby Atmos module. As lineups go, it offers plenty of flexibility to the home cinema purveyor.

The set auditioned here contains the £600/pair F5s and £250/pair B5s to handle front and rear channels, plus the C5 centre speaker (£200) and two of the A4 Atmos modules (£250/pair). This is underpinned by the £650 S12EQ active subwoofer.

The range has been engineered and voiced by Andrew Jones, who originally made a name for himself with his work for KEF and

Pioneer/TAD – at the latter company he was responsible for its massively expensive Reference One models. Here, 'every speaker is built from a clean-sheet design,' he says.

ELAC awakens

Using the ELACs with regular 'flat' material demonstrates a number of extremely positive traits. It becomes clear they're very accurate but unforced speakers. The top-end is smooth but detailed, and there's an even blend between high frequencies and midrange. Plus, in keeping with a number of full-size speaker packages, each member of the Debut system has enough bass power to give soundtracks welcome heft without being totally dependent on the sub to fill out the performance.

That said, the S12EQ is a bit of a star. This is a sizeable device that appears to have been designed entirely with potency in mind and to hell with aesthetics. It carries bass moments with scale and low-level menace, pulverising you into your chair, although it's not the most

SPECIFICATIONS

DEBUT F5

DRIVERS: 1 x 1in tweeter; 1 x 5.25in midbass; 2 x 5.25in woofers **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 42Hz-20kHz **SENSITIVITY (CLAIMED):** 85.5dB **POWER HANDLING:** 140W **DIMENSIONS:** 200(w) x 965(h) x 222(d)mm **WEIGHT:** 14.9kg

DEBUT B5

DRIVERS: 1 x tweeter; 1 x midbass **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 46Hz-20kHz **SENSITIVITY (CLAIMED):** 85dB **POWER HANDLING:** 120W **DIMENSIONS:** 200(w) x 324(h) x 222(d)mm **WEIGHT:** 5.2kg

DEBUT C5

DRIVERS: 1 x tweeter; 2 x midbass **ENCLOSURE:** Ported **FREQ. RESPONSE (CLAIMED):** 48Hz-20kHz **SENSITIVITY (CLAIMED):** 87dB **POWER HANDLING:** 120W **DIMENSIONS:** 476(w) x 200(h) x 222(d)mm **WEIGHT:** 8.2kg

DEBUT A4

DRIVERS: 1 x 0.5in tweeter; 1 x 4in midbass **ENCL:** Sealed **FREQ. RESPONSE (CLAIMED):** 180Hz-20kHz **SENSITIVITY (CLAIMED):** 85dB **POWER HANDLING:** 50W **DIMENSIONS:** 200(w) x 123(h) x 222(d)mm **WEIGHT:** 6.5kg

DEBUT S12EQ (SUBWOOFER)

DRIVERS: 1 x 12in active; 1 x 12in passive **ENCLOSURE:** Sealed **FREQ. RESPONSE (CLAIMED):** 25Hz-150Hz **POWER:** 500W **REMOTE:** App control instead **DIMENSIONS:** 432(w) x 432(h) x 432(d)mm **WEIGHT:** 24.9kg **CONNECTIONS:** LFE in

fleet of foot. An accompanying app ensures that adjusting its performance is simple.

Regard Dolby Atmos, the ELAC A4s look unobtrusive, and the sound they produce might also warrant the same term. Fed Blu-ray of *Mad Max: Fury Road*, at first there was perhaps little that the ELAC system did in Atmos mode to have me shouting 'Ah, that's the Atmos version!'. Yet switch back to the core TrueHD mix and you're aware that the presentation closes in and loses some of the effortless three-dimensionality that the A4s provide. They're effective at blending in with the rest of the array, and in my room succeeded in adding an additional layer of complexity and height. They're not a full-range proposition, though, and other Atmos speakers I've heard have been more attention-grabbing, with height-layer effects more deliberate and tangible.

Overall, though, this is a fine and well-priced Atmos array ■

HCC VERDICT



ELAC Debut 5.1.2

→ £1,950 → www.hifi-network.com

WE SAY: Superb performance in stereo and multichannel, and a compact and effective Atmos add-on.

Dynaudio Emit

Dynaudio has lowered its sights with its Emit speaker range.

Danny Phillips gives it a 5.1 workout



DYNAUDIO IS A speaker brand doing most of its business at the high-end. The company has been pushing the audio envelope since the late '70s with pioneering speakers like the Consequence, Evidence and Contour. They're typically innovative, distinctive and accomplished. One thing they're usually not is affordable – something that Dynaudio is addressing, sort of, with this entry-level range.

Admittedly, at a chunk over £3,000, this 5.1 package is not everyone's idea of affordable, but given that a pair of Dynaudio's Evidence Platinum floorstanders costs £58,000,

it could be seen as a bargain, relatively speaking.

The 5.1 setup on test here includes a pair of the Emit M30 floorstanders (£1,250), the M15C centre (£425) and a pair of M10 bookshelf speakers (£500). The range also includes a larger bookshelf option, the £600 M20.

There's no specific sub for the Emit line, but Dynaudio recommends its SUB 600. This sells for £1,400 normally but is £1,000 when bought as part of this 5.1 set.

With Guillermo del Toro's Gothic chiller *Crimson Peak* the Emits serve up a rich and sumptuous soundstage to match the movie's gorgeous visuals. The DTS-HD Master Audio track gives the system a chance to demonstrate its range, combining a lightness of touch with power and dynamics.

The movie is more about atmosphere than slam-bang action, and the Dynaudios crank up the tension with gleeful relish. As damsel-in-distress Edith creeps through haunted corridors, the speakers punctuate the eerie quiet with sonic minutiae. It's a masterclass in detail retrieval, with this system's ridiculously capable tweeters revealing subtleties in a realistic, tangible manner. There's a nice tonal neutrality to the presentation, too.

Careful voice-matching and uniform dispersion ensure a cohesive soundstage in which effects move gracefully across channels. For example, Edith sits in the bath and throws a ball for the dog. It scampers off to fetch, pawsteps moving from front to the rear and

SPECIFICATIONS

EMIT M30

DRIVERS: 1 x 1.1in tweeter; 2 x 6.5in midbass drivers **ENCLOSURE:** Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 40Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 200W **DIMENSIONS:** 204(w) x 960(h) x 275(d)mm **WEIGHT:** 18.0kg

EMIT M15C

DRIVERS: 1 x 1.1in tweeter; 2 x 4.5in midbass drivers **ENCLOSURE:** Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 60Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 150W **DIMENSIONS:** 500(w) x 130(h) x 210(d)mm **WEIGHT:** 7.0kg

EMIT M10

DRIVERS: 1 x 1.1in tweeter; 1 x 5.5in midbass driver **ENCLOSURE:** Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 50Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 150W **DIMENSIONS:** 170(w) x 292(h) x 238(d)mm **WEIGHT:** 5.6kg

SUB 600 (SUBWOOFER)

DRIVERS: 1 x 12in woofer **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 22Hz-200Hz **ONBOARD POWER:** 300W **REMOTE:** No **DIMENSIONS:** 350(w) x 370(h) x 420(d)mm **WEIGHT:** 21kg **CONNECTIONS:** LFE/slave input; slave out; stereo in/out

back again without the slightest timbral shift. And thanks to their excellent dispersion, the M10 surrounds are easily placed and disguise their position well, adding rear-field colour without being overly directional.

The SUB 600 fits in well, generating huge waves of LF noise as the drama builds. Del Toro signposts his jump shocks with deep burbles of bass; the woofer makes them undulate and shudder through your chest.

With music material this £3,200 system is sparky and precise, with a superb sense of rhythm. The transparency enjoyed with movie playback is even more apparent here, giving an accurate depiction of any song played. Sam Smith's *Spectre* theme is handled with fluidity and depth, strings swelling through the Emit drivers. Detail is abundant, from the breathy top edge of Smith's voice to the strokes of harp deep in the mix. It's all there.

Dynaudio has poured its high-end *savoir faire* into a relatively affordable package and the result is a fabulous system. Not the sharpest-looking cabinets around, but this ensemble delivers one of the most natural soundstages I've heard at this price ■

AV INFO

PRODUCT: 5.1-channel speaker package

POSITION: Dynaudio's entry-level speaker range

PEERS: DALI Opticon 5.1; Monitor Audio Gold 200AV

HCC VERDICT



Dynaudio Emit 5.1

→ £3,200 → www.dynaudio.com

WE SAY: Natural, transparent presentation, tons of detail, superb bass slam and quality build. Workmanlike looks, though.

Q Acoustics Concept

Ed Selley is reminded that Q Acoustics isn't only interested in bookshelf speakers



FROM A LATE start (2006), Q Acoustics has become one of the major players in affordable loudspeakers. Its policy of using relatively conventional materials in well thought-out speaker designs has earned a lorry-load of awards and a large fanbase. But it's not content to focus only on the budget category...

On test here is the company's Concept series in a 5.1 guise. This is Q Acoustics' flagship product. Although if you think that 'flagship' equates to rare metal drivers and designer cabinets, think again. It's still an affordable system (£1,750), mainly because of the drivers used – there's no real difference between the ones here and those found in other Q Acoustics speakers that cost a lot less. The Concept is all about the cabinet. Gone is the regular MDF affair of the

2000 series and in its place comes something more unusual – a 'Gelcore' cabinet assembled from two layers of MDF separated by a resonance-cancelling compound. The result is a 'cabinet within a cabinet' and inert speakers that feel radically different to their brethren.

Old faithful

The idea of relying on a set of drivers designed for a less expensive range of speakers might sound like a risky one, yet it works well here. Most importantly, the Concepts never sound like cheap speakers in an expensive suit. Give them the well-mastered and lively *Jurassic World* Blu-ray and they unpick the detailed and spacious DTS-HD soundmix with ease. The escape of the *Indominus rex* is handled effectively, with the near-silent jungle suddenly becoming a mass of noise and fury as the creature finally appears. Little details are recreated with attention-piquing realism.

The Concepts locate effects correctly without being unduly directional; dispersion is impressive. And the soundstage across the front three channels in particular sounds

SPECIFICATIONS

CONCEPT 40

DRIVERS: 2 x 5in midbass; 1 x 1in tweeter
ENCLOSURE: Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 53Hz-22kHz
SENSITIVITY (CLAIMED): 90dB **POWER HANDLING:** 150W **DIMENSIONS:** 170(w) x 972(h) x 288(d)mm **WEIGHT:** 18.5kg

CONCEPT 20

DRIVERS: 1 x 5in midbass; 1 x 1in tweeter
ENCLOSURE: Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 64Hz-22kHz
SENSITIVITY (CLAIMED): 86dB **POWER HANDLING:** 75W **DIMENSIONS:** 170(w) x 260(h) x 288(d)mm **WEIGHT:** 12kg

CONCEPT CENTRE

DRIVERS: 2 x 4in midbass; 1 x 1in tweeter
ENCLOSURE: Rear-ported **FREQUENCY RESPONSE (CLAIMED):** 75Hz-22kHz
SENSITIVITY (CLAIMED): 88dB **POWER HANDLING:** 75W **DIMENSIONS:** 430(w) x 150(h) x 198(d)mm **WEIGHT:** 6.8kg

2070SI (SUBWOOFER)

DRIVERS: 2 x 6.5in woofers **ENCLOSURE:** Ported **FREQUENCY RESPONSE:** Not given
ONBOARD POWER: 150W **REMOTE:** No
DIMENSIONS: 195(w) x 425(h) x 560(d)mm **WEIGHT:** 14.6kg **CONNECTIONS:** Stereo phono input

seamless. The two-and-a-half-way centre speaker isn't a weak link in the chain; dialogue remains clear and easy to follow, and LCR audio pans retain their body.

With the floorstanders claiming a 90dB sensitivity, I rarely needed more than -35 on my AVR's dial to get a healthily loud sound. And they're capable of being deafening if that's what you're after, while staying clear, detailed and able to deliver the same honest and open presentation at lower levels too.

The only slightly discordant note is that the 2070Si subwoofer is less subtle than its passive brethren. It is still a good woofer for the asking price (£280 if you buy separately) and has more low-end urge than you would expect from its twin 6.5in drivers, but it lacks some of the delicacy at low volumes that the rest of the array showcases.

Overall, Q Acoustics has rustled up classy, neutral and well-balanced speakers. The revised cabinets leave them better proportioned and altogether smarter than the models from which they evolved. And they're no harder to drive and live with than their more affordable stablemates ■

AV INFO

PRODUCT: Floorstanding 5.1 speaker array

POSITION: Q Acoustics' current flagship system

PEERS: Acoustic Energy 100; Tannoy Mercury; DALI Zensor

HCC VERDICT



Q Acoustics Concept 5.1

→ £1,750 → www.qacoustics.co.uk

WE SAY: An impressive step-up for Q Acoustics, where a sweet performance is matched by smart, slender design. Good job.

Wharfedale DX-1SE

Danny Phillips reckons Wharfedale could teach Hollywood a thing or two about Special Editions



ANYONE WHO'S SEEN the CG song-and-dance routine added to *Return of the Jedi* will know that Special Editions aren't always a good idea. The same can be true of AV gear – an SE revamp can involve nothing more than a lick of paint and a mark up. Yet with the DX-1SE – a reboot of 2012's DX-1 HCP compact speaker package – Wharfedale is looking to put the 'special' back in Special Edition. It's fine-tuned drivers and re-engineered cabinets in an effort to tighten up performance and turn a good speaker system into a great one.

The DX-1SE was born to bring 5.1 sound into rooms without lots of space. The compact satellites take their design cues from Wharfedale's Diamond series, but shrunk down to a more manageable size. In the system are four identical satellites, a centre and a powered subwoofer. The front/surround

sats measure a diddy 190mm tall. There's a choice of gorgeous black or white high-gloss finishes.

The satellites use a 3in mid/bass driver and 0.75in silk dome tweeter, but the horizontal centre speaker uses two mid/bass units, with

a rear vent filled with a porous foam plug to control airflow and aid bass response.

The WH-D8 subwoofer is styled to match and is a compact, cube design. A manual inspection reveals a slight dip in build quality, with gloss only used on the front panel, but overall it feels a well-made sub for the money – this whole shebang costs a mere £400.

Clunk, click, every trip

I sent the DX-1SE into battle with the *Mad Max: Fury Road* soundmix and although the system lacks the mind-blowing scale and power of larger bookshelf or floorstander-based systems, the soundstage is no doubt much bigger than you'll expect. When Furiosa's rig is attacked, the Wharfedales fire the succession of explosions and collisions into the room with gusto. There's no shortage of enthusiasm or excitement here, the satellites making up for their dinky size with crisp, dynamic voicing.

The system also displays decent poise and refinement for the money, imbuing those aggressive effects with just the right amount of bite but refusing to harden up or become fatiguing. It's an enjoyable sound.

The tweeters tease out decent amounts of high-frequency detail. In the aftermath of the *...Fury Road* sandstorm, the entire 5.1 field bristles with rustling sand and chinking chains as Max tries to free himself. Such textures add

SPECIFICATIONS

DX-1SE SATELLITES

DRIVE UNITS: 1 x 0.75in tweeter; 1 x 3in mid/bass driver **ENCLOSURE:** Two-way closed box **FREQUENCY RESPONSE (CLAIMED):** 100Hz-22kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 100W **DIMENSIONS:** 110(w) x 190(h) x 123(d)mm **WEIGHT:** 1.5kg

DX-1SE CENTRE

DRIVE UNITS: 1 x 0.75in tweeter; 2 x 3in mid/bass drivers **ENCLOSURE:** Two-way aperiodic system **FREQUENCY RESPONSE (CLAIMED):** 80Hz-22kHz **SENSITIVITY (CLAIMED):** 87dB **POWER HANDLING:** 100W **DIMENSIONS:** 292(w) x 110(h) x 123(d)mm **WEIGHT:** 2.2kg

WH-D8 (SUBWOOFER)

DRIVE UNITS: 1 x 8in long-throw woofer **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 40Hz-120Hz **ONBOARD POWER:** 120W **REMOTE CONTROL:** No **DIMENSIONS:** 268(w) x 328(h) x 322(d)mm **WEIGHT:** 7.5kg **CONNECTIONS:** Stereo phono input/LFE input

up to a layered, realistic experience. On the downside, the DX-1SE dispatches these HF effects with such surgical precision that it can feel a little clinical. Bigger, more expensive systems are richer and silkier at the top end, with a warmer, bolder midrange to boot.

Dialogue is anchored to the screen by the somewhat larger centre. Max's narration sounds full-bodied and nuanced, while the War Boys' voices cut through chugging engines and explosions as they do battle in the desert.

Compact systems like this live or die by the quality of their subs, given that small satellites can't generate enough deep bass on their own. Indeed, the DX-1SE sats only dip down to 100Hz. Thankfully this woofer is a budget gem, bringing a sense of authority and scale to the movie's key moments without faltering. In *...Fury Road*, there's an enormous rumble as rocks tumble into a ravine, which reinforces the solid clatter coming from elsewhere. It could perhaps be a little quicker and nimbler with rhythmic effects, but on the whole it does a sterling job.

As said, with the DX-1SE you don't get thunderous power and epic scale; nor do you experience lush 360-degree immersion – the surrounds are too precise and directional for that. But you do get a beautiful system that has punch, impact and can easily draw you into a movie, and one that improves on what came before – George Lucas take note ■

AV INFO

PRODUCT: 5.1-channel compact speaker system

POSITION: Affordable update of the DX-1 HCP

PEERS: Polk Audio TL1600; Quad L-ite Plus 5.1

HCC VERDICT



Wharfedale DX-1SE

→ £400 → www.wharfedale.co.uk

WE SAY: A crisp, precise, sound with good punch and composure from neat-looking cabinets. Limited scale and power, but the price is right.

PSB Imagine XA

Canadian audio noodler PSB delivers its first Atmos-enabled speakers at a tempting price. **Steve May** gets high



PSB'S IMAGINE XA is the latest addition to the slowly growing ranks of dedicated Dolby Atmos-enabled upfiring loudspeakers. They're a mid-priced offering (£350 per pair), smart enough to pass muster in well-appointed company, thanks to a black ash cabinet and matching fabric grille.

The speakers are intended to sit atop and cosmetically match PSB's X2T, X1T and XB floorstanders and monitors – the drivers should also be a timbre match – although they can be used as standalone additions to an existing home theatre system. Anti-slip strips are provided in the box for those chancing them with third-party towers or on dedicated speaker stands.

Setup is straightforward: if you're not mounting them atop sibling PSBs, aim to place them around a metre off the floor (and no lower than 91cm, insists PSB), and ideally around 2m from your listening position. Alternatively, the modules have an integrated wall-mounting bracket, which means they can be installed, angling downwards, in a front/rear/side-height position.

Unlike the budget Atmos speaker *du jour*

– Onkyo's SKH-410 – the PSBs are two-way cabinets. The Imagine XA tweeter, with cute PSB logo, is a ferrofluid-cooled 1in titanium dome with neodymium magnet, while the mustard-coloured 4in woofer employs a clay-filled polypropylene cone.

The pair look sweet and it's tempting to use them without their grille, but they are designed to go undercover. There's clearly something happening regards directionality with the grille, as the two drive units are isolated by foam inserts that function as a wave guide. A pair of chunky speaker terminals, labelled 'Height' to avoid any novice confusion, complete the look.

Typically these Imagine XAs would be used as a pair, or quartet, dictated by the channel support of your chosen Atmos AV receiver. The idea is to bounce the height elements in the Atmos mix off your ceiling, with a little bit of crafty notch-filtering added, back to your ears. They effectively become virtual ceiling speakers.

Listen up

The Imagine XA's closest competition probably comes from KEF's R50s [reviewed in *HCC* #252], but as a pair the PSBs are some £250 cheaper, which will make them hard to ignore for most shoppers. And despite this relative affordability, there's nothing cut-price about performance. While the rival KEFs have arguably more weight and a superior cosmetic finish, these XA's are still a full-bodied listen. I suspect you'll be hard pressed to spot any obvious differences between the two amid the chaos of a *Transformers: Age of Extinction* melee.

In purely sonic terms, the modules sound smooth and accurate. The quality of the drivers would not seem inappropriate in an upmarket bookshelf design. This isn't much of a surprise as they are the same used in the rest of the Imagine range.

And in theatrical use the Imagine XAs are highly effective, effortlessly directing and

SPECIFICATIONS

DRIVE UNITS: 1 x 1in Titanium dome tweeter; 1 x 4in clay-infused polypropylene cone midbass driver

ENCLOSURE: Sealed Dolby Atmos-enabled design **FREQUENCY RESPONSE (CLAIMED):** 100Hz-23kHz

SENSITIVITY (CLAIMED): 87dB

POWER HANDLING: 80W

DIMENSIONS: 165(w) x 267(h) x 171(d)mm

WEIGHT: 7.26kg (pair)

The XAs' wave-guide grilles work to ensure the speakers hit the target Dolby Atmos spec

panning objects above the main surround plane. Dolby's Atmos *Amaze* trailer sounds fresh and immersive; the PSBs placing specific rainforest FX convincingly up high. 360-degree wraparound pans are steered without breakage.

The Dolby Atmos mix of Enrique Iglesias' Latin-infused pop hit *Bailando* features plenty of snappy height-mixed handclaps that help carry the dance rhythm like a wave; these speakers have no problem keeping up with the beat – they're fast and musical. There's nothing particularly jarring about their presentation either; you should be able to system-match these modules with pretty much any premium cabinetry (although listening to them did make me hanker after a pair of PSB X2T floorstanders to partner them with).

A frequency sweep reveals some very faint signs of life from as low as 31.5Hz, but the speakers truly become effective at around 100Hz. This extended range creates plenty of opportunities in terms of crossover choice and system tuning.

At higher registers, the Imagine XAs sound a tad compressed – I couldn't help imagining them tethered to a leash – but this actually seems to work well with Atmos elements, as it seems to make height objects a little easier to follow.

Difficult to resist

These are a solid combination of value and performance. If you're upgrading to a Dolby Atmos array, the Imagine XAs occupy a difficult to resist centre-ground, and when it comes to sheer sonic involvement they're a blast. They're not as visually sexy as the rival KEFs, and they stand 26cm high, which may come as a surprise, but they belong on your audition list ■

AV INFO

PRODUCT: Dolby Atmos-enabled speakers

POSITION: PSB's first Atmos offering, part of its Imagine series

PEERS: KEF R50; Definitive Technology A60

HCC VERDICT



PSB Imagine XA

→ £350 → www.psbSpeakers.com

WE SAY: Handsomely finished Atmos upfiringers combine a well-rounded performance with easy-to-match sonic character.

1



DALI Opticon

Danny Phillips finds both music and movies get love from this floorstanding DALI set

WITH ITS OPTICON line, DALI aims to deliver a speaker range accessible to a wide audience, yet without compromising its high-end values. It's positioned below the larger and more advanced Epicon, Helicon and Rubicon series and comprises seven new models: the compact Opticon 1 and mid-sized Opticon 2 standmounts, the wall-mountable Opticon LCR, the Opticon Vokal centre and three floorstanding options – the Opticon 5, 6 and 8, in ascending size order.

For the system on test here, I'm using a £1,200 pair of Opticon 6s and the £430 Opticon Vokal at the front, with Opticon 2s on surround duty (£650 per pair). Bass is reinforced by the new £900 SUB K-14 F.

Opticon is the replacement for DALI's Ikon series, but its design is more living-room friendly than its predecessor. The Opticon 6 is a quite glamorous-looking speaker, and the 1m height and considered styling keep it the right side of imposing. A boxy cabinet leaves envelopes un-pushed, but it's as robust and hefty as you'd expect, with internal bracing providing extra rigidity. On the back are chunky gold-plated bi-wirable binding posts.

The entire Opticon range comes in Black Ash, Light Walnut (pictured) or White Matt Satin vinyl finishes. The use of vinyl means that while they all look nice, they feel plasticky to the touch, reducing the sense of luxury slightly. The high-gloss baffle, embellished by silver trim and a panel at the top housing DALI's familiar hybrid tweeter module, impresses more.

That tweeter module hosts a dome mounted below a ribbon, the latter rolling in for high frequencies above 10kHz and reaching beyond 30kHz, claims DALI. The ribbon resides in its own separate chamber shielding it from the woofers beating below. Because of its wide dispersion, DALI doesn't recommend toeing in the speakers as it could result in an overly bright sound.

The Opticon 6 floorstander also features a pair of 6.5in woofers constructed from a mixture of paper and wood fibre, screwed directly into the 25mm-thick MDF baffle. Behind it, the magnet motor system uses a pole piece made from Soft Magnetic Compound (SMC), a coated magnet granule that can be formed into any shape. SMC, I'm told, boasts high magnetic conductivity

AV INFO

PRODUCT:
5.1-channel
floorstanding system

POSITION:
Between the Fazon
and Rubicon lines

PEERS:
Q Acoustics
Concept 5.1;
Acoustic Energy
1-Series

and low electrical conductivity, keeping distortion and colouration at bay. This magnet mashup is used by all models in the Opticon range.

The Vokal centre channel enclosure also uses the hybrid tweeter system, alongside a single 6.5in woofer, while the two-way Opticon 2 has just a dome tweeter to join its midbass cone. Both speakers share the Opticon 6's solid construction.

As the name implies, the SUB K-14 F uses a sizeable 14in front-firing aluminium long-stroke woofer, driven by a 450W Class D amplifier. It's handsomely styled, but is only available in a White Matt Satin or Black Ash vinyl finish, meaning it looks a little out of place in our array.

The aforementioned Opticon LCR model is designed for cinema rooms where wall-mounted speakers are a must. These feature a 130mm deep cabinet and use a single midbass driver and hybrid tweeter.

Awakened by audio

For sheer sonic thrills, I'm finding it very hard to resist *Star Wars: The Force Awakens*' sublime DTS-HD Master Audio track [*I'd noticed – Ed*], and the Opticon system does a credible job of bringing it to life.

DALI's signature sound is one of refinement and detail, and this permeates every scene. As Kylo Ren questions Lor San Tekka during the Jakku village raid in the movie's opening act, the speakers' clarity and impeccable timing adds a 'real world' flavour to effects – torched huts crackle and pop as if you were stood next to them, while footsteps on the sandy floor have a crunchy texture.

When the action switches to Rey scavenging inside the Star Destroyer, it's a showcase for the DALI's top-end resolution. From the microscopic rustle of dust as she peels back the hatch to the metallic clicks as she rips out parts, it's absolutely breathtaking. And the wide dispersion characteristic of that hybrid tweeter is in evidence, with this top-end clarity maintained over an expanded listening area.

John Williams' refreshed *Star Wars* score seems tailor-made for this system's insightful presentation. The opening fanfare is accompanied by musical elements that I hadn't really considered before, like the tinkling bells and percussion. Brass lines are crisp and punchy, and the system's masterful imaging accurately places musical elements at specific points across the front soundstage, making the beloved composition sound like a live performance.

But such forensic precision isn't limited to the Opticon 6s and their hybrid tweeters. The Opticon 2s ensure a similarly high level of detail in the surround plane, as demonstrated by subtle metallic rattling inside the Millennium Falcon. And because they offer excellent bass extension – more so than the smaller £500 per/pair Opticon 1s, which could also be used as a surround speaker option – the Opticon 2s create a deep, atmospheric bed of surround sound, peppered with crisp effects that pan seamlessly. Tonally, all of the speakers sound well-matched, creating a smooth, uniform soundstage.

Don't let this system's musicality and sophistication fool you though – it does the rough stuff as well. The front trio conveys exploding TIE fighters and roaring Rathtars with vigour. There's bite aplenty, and during frantic sequences with multiple effects, there's a clean, quick nature to the sound. While paper and wood may not sound like the sexiest materials for a speaker driver, DALI's mid/bass units are agile and responsive.

SPECIFICATIONS

Opticon 6

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 1 x 17mm x 45mm ribbon tweeter; 2 x 6.5in paper/wood fibre midbass drivers **ENCLOSURE:** Bass reflex **FREQUENCY RESPONSE (CLAIMED):** 49Hz-32kHz **SENSITIVITY (CLAIMED):** 89dB **POWER HANDLING:** 200W **DIMENSIONS:** 195(w) x 1,001(h) x 330(d)mm **WEIGHT:** 18.9kg

Opticon Vokal

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 1 x 17mm x 45mm ribbon tweeter; 1 x 6.5in paper/wood fibre midbass driver **ENCLOSURE:** Bass reflex **FREQUENCY RESPONSE (CLAIMED):** 47Hz-32kHz **SENSITIVITY (CLAIMED):** 89.5dB **POWER HANDLING:** 150W **DIMENSIONS:** 435(w) x 201(h) x 312(d)mm **WEIGHT:** 8.8kg

Opticon 2

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 1 x 6.5in paper/wood fibre midbass driver **ENCLOSURE:** Bass reflex **FREQUENCY RESPONSE (CLAIMED):** 59Hz-27kHz **SENSITIVITY (CLAIMED):** 87dB **POWER HANDLING:** 150W **DIMENSIONS:** 195(w) x 351(h) x 297(d)mm **WEIGHT:** 7.8kg

SUB K-14 F (subwoofer)

DRIVE UNITS: 1 x 14in aluminium long-stroke bass driver **ENCLOSURE:** Bass reflex (down-ported) **FREQUENCY RESPONSE (CLAIMED):** 29Hz-160Hz **ONBOARD POWER:** 450W Class D amplifier **REMOTE CONTROL:** No **DIMENSIONS:** 396(w) x 429(h) x 428(d)mm **WEIGHT:** 26.4kg **CONNECTIONS:** LFE input; phono input

The Opticon array also does scale in its sleep, thanks in no small part to the K-14F subwoofer, which DALI describes as more home cinema-focused than its previous models. It has suitable power reserves to get its piston woofer going like the clappers, and it easily conveys the enormity of some of *Star Wars*... galactic-scale explosions, sending tremors through the room.

After a bit of trial and error with placement and volume, the sub melded invisibly into my setup. Its low-frequency output bleeds into everything, lending depth and body to Ren's voice without compromising its intelligibility behind all that apparatus. And despite its impressive scale and muscularity, the K-14 is relatively quick on its toes. There were moments where I was jolted by its ability to slam fast.

Changing down a fear gears to *Drive* on Blu-ray, the Opticon setup makes short shrift of the movie's subtle soundtrack. It nails the tension of the opening car chase – the throbbing electro bass, the ticking watch and the police helicopter doing a 360 around the room. I was also impressed by the Vokal's dialogue skills. Ryan Gosling's infrequent words come through clearly, with the hybrid tweeters tickling out his vocal nuances.

And with two-channel music the Opticon system really excels. Its treatment of *Breezin'* by George Benson on CD is sublime. Transparency and refinement gives you a faithful reproduction of the signal; DALI doesn't stamp any particular sonic agenda on the sound, other than a slightly embellished top-end that lends air and texture.

This level of musicality, combined with a barnstorming home cinema performance, makes DALI's Opticon system a must-audition if you're shopping at this price point ■

1. The centre and Opticon 6 floorstander use DALI's hybrid dome/ribbon tweeter

HCC VERDICT



DALI Opticon 5.1

→ £3,200 → www.dali-speakers.com/uk

WE SAY: A classy mid-range proposition from DALI that balances hi-fi sensibilities with the power and snap that home cinema fans crave. Good-looking, too.

Sony VPL-HW45ES

Sony's latest projector sets the bar for the mid-priced Full HD projection market, suggests **John Archer**



THIS PROJECTOR ARRIVES on the back of plenty of anticipation. Its predecessor, the HW40ES, was a leading light in the sub-£2,000 price bracket, and since that model was launched Sony's projector division has gone from strength to strength with its native 4K/high dynamic range-capable VW320ES and VW520ES home cinema beasts.

The HW45ES is not, though, a 4K projector. It's Full HD only. Nor does it support HDR. But in most other ways the HW45ES is a serious proposition, and Sony claims that its innards have undergone a radical reworking, resulting in better colour and noise handling. What hasn't changed, though, is the design. The attractive white (black is also available) exterior looks the same as the one wrapped around the HW40ES. Connections are pretty minimal; there are two HDMI inputs, a USB for firmware updates, and IR and RS232 ports.

There's no 12V trigger or analogue AV inputs.

The projector has a brightness rating of 1,800 Lumens (a slight increase from the 1,700 Lumens of the HW40ES), and a long-life lamp reckoned to soldier on for a massive 6,000 hours if you stick with Sony's most economical setting.

Be careful with contrast

Setup is relatively straightforward. Zoom (a handy 1.6x) and focus have to be operated manually rather than from the Sony PJ handset. There are (wide-ranging) vertical/horizontal image shift wheels to get your image positioned correctly, while the throw ratio of 1.36-2.16:1 should suit most typical-sized cinema rooms/screens.

Once you've got basic setup finalised, I'd recommend turning the Contrast Enhancer system down to Low or off entirely from the default setting, which is Middle. Otherwise, I discovered, dark areas of the image can look empty and dominant.

The Sony operates more comfortably for dark room viewing with the lamp set to Low rather than the High default used even with the projector's two Cinema Film picture presets. The higher lamp mode causes greyness over black areas, a slight reduction in light uniformity and an increase in source noise. And while Sony's True Cinema Motionflow processing option is effective and tries to retain the slightly 'pulsing' look of 24p film, I ended up turning it off completely, as for me the unit's native motion handling is good enough not to need any help.

The HW45ES's pictures once again put Sony right at the forefront of the sub-£2,000 projector class. The performance trait that stands out most is the exceptional detail and clarity the image contains. During a run through of Mel Gibson's *Apocalypse* I swear

SPECIFICATIONS

3D: Yes. Active **4K:** No. 1,920 x 1,080 **HDR:** No **CONNECTIONS:** 2 x HDMI inputs; IR input; RS232; USB port for firmware updates **BRIGHTNESS (CLAIMED):** 1,800 Lumens **CONTRAST (CLAIMED):** N/A **Zoom:** 1.6x **DIMENSIONS:** 407(w) x 179(h) x 464(d)mm **WEIGHT:** 10kg

FEATURES: 6,000-hour claimed lamp life; 22dB claimed minimum fan noise; Reality Creation upscaling processing; Motionflow; vertical (+/- 71%) and horizontal (+/- 25%) image shift; 40in-300in image size; 215W lamp; 1.36:1-2.16:1 throw ratio

I could see little details I'd not witnessed before on an HD projector, in everything from close-ups of faces to the dense flora and fauna of the forests.

As well as making *Apocalypse*'s BD visuals look dense, immediate and immersive, the level of detail is such that it seems to open up the sense of space in the picture.

Contributing in no small measure to this is some nuanced handling of light. The amount of shadow detail the PJ is able to resolve without compromising black level depth really is exemplary, and the HW45ES has enough native contrast to render subtle light shifts with authority, never letting any dark or light shades dominate.

A final factor contributing to the PJ's spectacular clarity is its colour handling. Each jungle leaf seems to have a natural shade of its own. Having strong black levels to 'bounce off' doesn't do the projector's colours any harm either.

For all their brilliance, images aren't as impressive in the black level and contrast departments as those you can get from PJs from Sony's big rival, JVC. As a counterpoint to that, JVC's entry-level DLA-X5000 retails for more than twice as much.

The projector is hit and miss with 3D. In the 'hit' column, its pictures look crisp and suffer with little crosstalk ghosting noise. However, Sony's 3D glasses design lets way too much light in around the side of the lenses, and the amount of brightness you have to sacrifice when switching from 2D to 3D is disappointingly extreme.

Let's not let a little 3D dimness spoil the party, though. Add a whisper-quiet running noise when running it in Low lamp mode to the HW45ES's prodigious 2D picture talents and you've got an easy recommendation ■

AV INFO

PRODUCT:
Full HD SXRD
projector

POSITION:
Below Sony's
4K-resolution home
cinema models

PEERS:
JVC DLA-X5000;
Optoma HD91+;
Epson EH-TW7300

HCC VERDICT



Sony VPL-HW45ES

→ £1,850 → www.sony.co.uk

WE SAY: The HW45ES manages to improve on even the efforts of its illustrious predecessor to become the best sub-£2,000 projector around.

BenQ W2000

BenQ's new projector has a remarkable feature set considering its £800 price, and wants to save you time when it comes to image adjustment. **John Archer** reports



WHILE A GROWING number of today's so-called home entertainment projectors are actually presentation PJs masquerading as movie machines, the BenQ W2000 is the real home cinema McCoy – despite its attractive £800 ticket.

Its living room rather than board room credentials are clear as soon as you look at it. Yes, it's slightly larger than many projectors in its price bracket, but it's more attractively shaped than most business models and even features a bit of bling in the form of a gold front panel that sits nicely – if a tad ostentatiously – against the glossy white of the unit's other edges.

Connections comprise two HDMI's, a D-Sub PC port, an RS232 port for system integration, a 12V trigger jack, mini and standard USB sockets, and even a 3.5mm audio loopthrough in recognition of the W2000's built-in speaker system. The USBs don't support data playback. Yet while one is only for service use, the other can attach an optional Wireless Full HD Kit so you can transmit HD pictures and sound from your sources to the W2000 cable-free. It's worth adding that one of the HDMI's supports the MHL protocol for projecting content stored on your mobile phone.

AV INFO

PRODUCT:
Sub-£1,000
single-chip Full HD
DLP PJ

POSITION:
Around the middle of
BenQ's latest
projection range

PEERS:
Optoma HD28DSE;
Epson EH-TW6600

BenQ's bright star?

Picture specifications are promising. The 2,000 Lumens of brightness is fairly typical for sub-£1,000 projectors these days, but it's not nearly so common to find this allied to a claimed contrast ratio as high as the W2000's 15,000:1.

Where things really get interesting, though, is with BenQ's 'Cinematic Color' feature. This uses a specially angled colour wheel, with a new coating, to deliver what BenQ claims is accurate support for the REC.709 video standard right out of the box. And BenQ's engineers check the REC.709 calibration at three different stages in the production of every unit; this isn't just some computer-generated 'more or less' calibration claim.

Despite this pre-calibration ethos, the W2000 features a good suite of colour and white balance management tools, and is endorsed by the Imaging Science Foundation (ISF). Getting the PJ installed within your room is aided by a decent 1.3x zoom and vertical lens shift, plus horizontal and vertical digital keystone correction. And the menu system has been designed not to complicate home cinema novices, too.

I kicked off my tests with the Cinema (REC.709) preset BenQ hopes will woo home cinema fans. I still tweaked it a touch with marginal brightness and contrast increases, and nudging down its gamma to its 2.1 level to bring out a bit more shadow detail. But this counts as a minimal amount of work before pictures look good. And for the most part that is an adequate description of the W2000's

SPECIFICATIONS

3D: Yes. **Active 4K:** No. 1,920 x 1,080
CONNECTIONS: 2 x HDMI inputs (one MHL); RS232 port, D-Sub PC port; 2 x USB; component video input; audio input/output
BRIGHTNESS (CLAIMED): 2,000 Lumens
CONTRAST (CLAIMED): 15,000:1
DIMENSIONS: 380.5(w) x 121.7(h) x 277(d) mm **WEIGHT:** 3.6kg

FEATURES: Cinematic Color; ISF support; colour management options; vertical image shift; onboard speaker; 1.3x zoom; 1.15-1.5:1 throw ratio; horizontal/vertical keystone correction; 6,000-hour lamp life (SmartEco mode); 2 x IR receivers; 12V trigger; optional Wireless HD streaming kit

imagery. Detail levels are particularly excellent, pulling out every last pixel of information and every last colour tone nuance from the largescale Egyptian crowd scenes in the gorgeous Blu-ray of Ridley Scott's *Exodus: Gods And Kings*.

DLP's micro-mirror approach means this sharpness is delivered, moreover, without the image suffering so much as a hint of visible pixel structure, even over tricky areas like expanses of blue skies and golden sand.

The impression of copious detail also owes a large debt to the superb balance the W2000 achieves between colour tones.

There are no major problems with colour banding or blocking, and it's a relief to find that despite the W2000's pictures being winningly bright they don't suffer much at all with DLP's colour striping issue – even when torches flicker against the night sky.

The projector falls a little short with its black level response, though. Dark sequences appear both greyer and less rich in shadow intricacies than I was hoping for, based on relatively high-spec BenQ projectors of the past. This less-than-stellar black level could be enough of an issue to put off home cinema fans who have taken care to black-out their room. Although the W2000's ability to still be watchable in a slightly more 'relaxed' light environment courtesy of its innate brightness may win it other fans.

Large-scale action scenes enjoy natural-looking motion (important as there's no frame interpolation feature to call upon). There's little noise from its built-in cooling fans and even the speaker system (2 x 10W) is better than the puny efforts usually found inside projectors. Overall the W2000 is another class act from BenQ ■

HCC VERDICT



BenQ W2000

→ £800 → www.benq.co.uk

WE SAY: While black levels could be better, this PJ impresses with its clarity and colour handling. Feature set is good for the price, too.

JVC DLA-X7000

JVC's projector makes **John Archer** question his AV priorities and relish his Full HD BD collection



THERE WAS ALMOST a two-year wait for JVC's DLA-X7000 to replace the previous X700 model, an eternity in the current AV world. It looks like JVC's engineers used the time wisely, though, adding dual HDMI 2.0a inputs and HDR support to JVC's proprietary D-ILA projection engine.

The X7000's 4K/UHD playback isn't quite as you might expect, though, since the projector doesn't actually sport a native 4K pixel count. Instead it uses JVC's e-Shift technology to give HD images a 4K feel by pushing them through two Full HD imaging chips offset diagonally by half a pixel. As ever, this sounds dubious. Especially as native 4K images have to be downscaled to 1080p before traversing the projector's optics; hardly music to the ears of AV fans desperate for pixel-by-pixel 4K thrills. That said, the system has proved in the past more effective than you

might think, especially when it comes to adding detail and texture to HD sources.

The X7000 claims to produce 1,800 Lumens of brightness – a rise of nearly 40 per cent over 2014's X700. Native contrast – with no dynamic light control – is rated an eye-popping 120,000:1.

Dynamic dilemma

In action the X7000's picture quality is... confusing. In a mostly great way.

Let's deal with the bad news first, which is that the X7000 doesn't have quite enough brightness to do full and consistent justice to HDR content. Right away I noticed that HDR pictures on the X7000 look markedly less bright *overall* than SDR ones – which admittedly does give the format's luminance highlights more room to shine (literally).

This lack of overall brightness – even though HDR requires you to run the lamp on its High mode, causing increased cooling fan noise – is an issue during dark scenes. In Ridley Scott's *Exodus: Gods and Kings*, darkest areas of night-time interior shots look hollow – like black holes – and some of the shadows on faces and walls appear slightly forced. And scenes that feature dark objects against a bright backdrop suffer too, losing shadow detail and colour info compared to the standard SDR Blu-ray image.

There are moments when HDR looks great on the X7000. During *Exodus*' coronation sequence, Ramses' robes glint in the Egyptian sun with an intensity and radiance. There's a slight boost to colour saturations with HDR content too, and while core brightness isn't the best, some shots still contain enough extra dynamism to look exquisite.

With standard BD pictures, the JVC is much more comfortable. Contrast is striking – pure whites and bold colours share the screen with

SPECIFICATIONS

3D: Yes, Active **4K:** No. 1,920 x 1,080 (with e-Shift 4K) **CONNECTIONS:** 2 x HDMI inputs; Ethernet service port; 12V trigger; RS232; 3D emitter port **BRIGHTNESS (CLAIMED):** 1,800 Lumens **CONTRAST (CLAIMED):** 120,000:1 native **ZOOM:** 2.0x **DIMENSIONS:** 455(w) x 472(d) x 179(h)mm **WEIGHT:** 15.6kg

FEATURES: HDR; HDMI 2.0a inputs support HDCP 2.2; ISF support; THX certified; noise reduction; colour/gamma management; high/low lamp modes; motorised lens setup; horizontal/vertical image shifting; claimed 21dB running noise; 10 x Lens Memory slots; wireless transmission

the deepest, most convincing black levels you're likely to find on any PJ at the price. Pristine shadow detailing give images a remarkable sense of depth, while brighter shots enjoy a healthy dynamism without the need for any HDR help from the source.

The X7000 also excels with its SDR colour handling. Even if you stick with the most movie-centric of its presets the combination of range, finesse and naturalism in its colour reproduction is a constant. With my *Exodus...* disc, the full extent of its colour qualities is particularly evident during the scene on the terrace of the Pharaoh's palace. Here, bright skies unite with the sandstone subtleties of the architecture, the actors' skin tones and the luxuriantly vibrant hues of the royal clothing to leave my jaw almost on the floor.

However, erm, shifty e-Shift 4K might sound, the latest version of it works well. Full HD Blu-rays are thrown onscreen with attractive sharpness. And, yes, they appear more detailed than on a 'straight' Full HD PJ. What's more, aside from very grainy content looking a touch noisier than I'd like, the e-Shift system delivers its apparent HD resolution boost with few unwanted side effects.

The situation is less clear cut with native 4K content; the JVC will accept a UHD source, it just can't display it faithfully. There's a somewhat processed feel to the projector's down-converted/up-rezzed 4K playback. Active 3D images, meanwhile, look pretty good with scale and detail, but some low-level crosstalk ghosting.

The X7000's issues with HDR mean a high-end TV is preferable with such material, but JVC's projector is so absurdly brilliant for its money with ordinary Blu-rays that you might not even care ■

AV INFO

PRODUCT: D-ILA projector with e-Shift 4K tech and HDR support

POSITION: In the middle of JVC's new DLA projector range

PEERS: Sony VPL-VW520ES; JVC DLA-X5000

HCC VERDICT



JVC DLA-X7000

→ £5,700 → www.jvc.co.uk

WE SAY: The X7000 may struggle with HDR playback, but it's outrageously good with regular Blu-rays. A real cinematic experience.

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Panasonic DMP-UB900

Panasonic's first UHD Blu-ray player is brilliant, and that's without even factoring in fabulous 4K, enthuses **Steve May**



PANASONIC'S DMP-UB900 STANDS as Ultra HD Blu-ray's early champion. Positioned above Samsung's UBD-K8500 in both price and spec, this is a player designed to serve the AV enthusiast without entirely pricing itself beyond the 4K curious.

While there's a lot of new technology beneath the lid, from the outside this looks very much a classic Panasonic disc spinner. The chassis is full-width, half-depth, with a drop-down translucent fascia. It's a nice-looking box, but doesn't approach the battleship build we're accustomed to from the likes of Oppo, Cambridge Audio or Pioneer.

A new standard doesn't bring with it any connection surprises, but what's here is excellent. Dual HDMI outputs, designated Video/Audio and Audio, cater for those with a non-4K/HDR AV receiver – link the player directly to the screen, leaving the Audio output to deliver multichannel sounds without images to the amp. Futureproofed users can route the Video/Audio output into an AV receiver that offers the necessary support.

Additionally there's a 7.1 analogue output bank, plus dedicated stereo phono pair, and optical and coaxial digital outputs. Beneath the front drawbridge are USB and SD card slots.

The player's main Home page offers buttons for Video, Music, Photos, Home Network and Network Services. The latter is essentially the

first-gen Panasonic content portal. It looks old-fashioned but at least the YouTube, Netflix and Amazon Video apps are 4K flavoured.

A clear improvement

So, what does this player deliver? Well, I was stunned by the quality of the 4K HDR images it proffers – think smooth colour gradations, loads of detail and extraordinary dynamics. It's a clear improvement on Full HD BD, although some discs dazzle more than others.

One aspect of the DMP-UB900 that will be of interest to early 4K TV buyers is the player's adjustable dynamic range conversion (DRC). This allows users to tailor playback for screens which are not HDR-enabled. DRC offers a sliding scale of adjustment, variable between -12 and +12 (the higher the value, the brighter the output). One end of the scale is intended for intrinsically bright LED panels, the other for dull ones, with the mid-point suitable for those standard LED LCD TVs which have an average brightness of around 350 nits.

To see just how this worked, I hooked up the UB900 to a first-gen Sony X9005 4K TV. A middling setting (+3) was about right for this screen. Using *San Andreas*' 'tip the hat' sequence, the blue sky provides a useful benchmark. Altering the dynamic range of the picture doesn't just effect brightness, but also colour, and there's a point where the sky takes on an unnatural purple hue.

Blu-ray players, of course, have to do much more than just spin movies to earn their keep. As a file player the UB900 is well equipped, even extending to DSD64 5.1 multichannel audio, which is about as esoteric as it gets.

While 4K Blu-rays are encoded with 4:2:0 colour subsampling, the player upscales to

SPECIFICATIONS

ULTRA HD: Yes **UPSCALING:** Yes. To 2,160p
MULTIREGION: No. Region B BD/R2 DVD
HDMI: 2 x outputs (1 x A/V; 1 x audio-only)
MULTICHANNEL ANALOGUE OUTPUT: 7.1
DIGITAL AUDIO OUTPUT: 1 x coaxial; 1 x optical
SACD/DVD-A: No/No **DIMENSIONS:** 435(w) x 68(h) x 207(d)mm **WEIGHT:** 2.4kg

FEATURES: Dynamic Range Conversion adjustment; USB port; SD card slot; Wi-Fi; Ethernet; Panasonic smart portal with Netflix, Amazon, YouTube et al; DLNA media playback; THX 4K Source certification; 3D BD playback; Pure Audio HDMI mode

4:4:4 and outputs at 12-bit. This is no surprise; Panasonic has been using this conversion for years on its standard BD hardware to reduce colour banding effects.

If you join the UB900 up to a non-4K TV, UHD discs will play back in 1080p resolution (provided studios allow it). I tried it with a 1080p plasma. While the player prompts you to load the Full HD BD, the downscaled 4K version looks very good. Quite why anyone would ever want to do this though remains a point of conjecture.

Perhaps the true mettle of the UB900 can be deduced through its regular AV performance, and here the deck knocks it out of the park. Upscaled with Einstein-grade processing, 1080p discs appear sensational, with pinpoint pixel info, smooth blends and vibrant colours. On a more practical level, it's a fast-loader. My reference Java-heavy BD (*Goldfinger*) went from tray out to menu screen in a sprightly 43 seconds.

This is also a very fine CD player in its own right. It manages that rare trick of playing overly-loud modern recordings – which are generally mastered with no real dynamic range – and adding a welcome sense of depth. It also sorts through the hash to find real detail, as much as with nuanced classical music as guitar-heavy rock.

First-generation genius

Overall, Panasonic's UHD Blu-ray debut is a cracker. You should never expect first-gen technology to be cheap, but the UB900 lands with only a modest price premium over its predecessor, the DMP-BDT700, yet offers so much more. Partner it with an HDR 4K display and you'll be grinning from ear to ear. And quite apart from its 2,160p talents, it's a great all-round performer ■

HCC VERDICT



Panasonic DMP-UB900

→ £600 → www.panasonic.co.uk

WE SAY: An imperious Ultra HD Blu-ray debut from Panasonic that remembers not to ignore the wider AV world in pursuit of new-format fun.

AV INFO

PRODUCT:
4K/Ultra HD
Blu-ray player

POSITION:
Panasonic's first
model to support
the new video
format

PEERS:
Samsung
UBD-K8500

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Sony UHP-H1

With the UHP-H1, Sony has delivered a premium AV player at a tempting price, says **Steve May**

I KNOW WHAT you're thinking. Why would anyone buy a new 2K Blu-ray player when 4K Ultra HD models are finally starting to appear? As it happens, if we're talking about Sony's UHP-H1 flagship, then price and performance are pretty darn compelling reasons. And I've another argument in favour of the H1 – if you're serious about AV, you may actually need two Blu-ray decks: one for 1080p discs and a second for 4K UHD. A 2K BD played into an HDR-enhanced/enabled HDMI input doesn't always look quite right. Sure, you can faff around switching this and that to compensate, but perhaps the best solution is to keep your sources separate?

I've also been swayed by the UHP-H1's handsome looks and build. This model employs a robust frame and beam chassis that even Oppo would be proud of. It's not full-width or height, but don't let that fool you.

Using the UHP-H1 presents no problems. The user interface is primarily built around



apps, both 'Featured' and personalised. Content options include Netflix, Amazon Video, BBC iPlayer, Spotify and PlayStation Now, Sony's streaming game service. The player can also be used with other Sony products in a multiroom ecosystem.

It doesn't take long to cop how great a video player the UHP-H1 is. With Super Bit Mapping engaged, the player does remarkable things with edge smoothing and interpolation. This is then upscaled to 2160 if you're using a UHD display.

Blu-rays look beautiful, and comparisons between native 4K discs reveal few image differences beyond the benefits of UHD's HDR

grading. And the UHP-H1 is equally as good with audio. With SACDs, it sounds astonishingly dynamic; it's compatible with DVD-Audio too, plus numerous video and audio codecs from MKV to DSD.

The more I used the player, the more I became enamoured with it. It combines sensational video performance with excellent sonics, and, considering the feature set, is a steal for the price ■

HCC VERDICT

★★★★★

Sony UHP-H1

→ £330 → www.sony.co.uk

ULTRA HD BLU-RAY PLAYER/£300

Samsung UBD-K8500

This debut 4K deck is well priced. But is that all it's got going for it? **John Archer** finds out

PANASONIC'S DMP-UB900 IS a hard act to follow. But Samsung's UBD-K8500 makes a case for itself thanks to the price – £430 at launch, and now available for less.

The K8500 is not, it must be said, as well built as the Panasonic UB900. A brushed finish and curved front edge can't hide the fact that the deck features a pretty lightweight build quality.

The player has two HDMI outputs, optical audio output, USB, Wi-Fi and Ethernet. There are no multichannel analogue outs, nor support for

legacy DVD-A or SACD discs, but some high-res audio formats, including FLAC and ALAC, are catered for. The smart portal houses 4K Netflix and Amazon apps.

Judging the K8500 with a library of Ultra HD Blu-ray discs, it performs better than might have been expected for the first 'mainstream' deck of the next-gen format, clearing delivering the full-fat experience of 4K and HDR. During the Times Square fight in *The Amazing Spider-Man 2*, for instance, there's more detail in close-ups of the actor's faces, Spidey's costume and the big city backdrop than you get viewing the same scene with the standard

Blu-ray. There's a greater sense of depth, too, partly as a result of the enhanced definition, but also because of a clear increase in the dynamic range of this contrast-rich and

colourful sequence. Vibrant colours zing, while subtler shades show precision, although compared to Panasonic's UB900, the Samsung delivers slightly less dynamism, and less detail in areas like skin and fine textures. They're not major differences, perhaps, but palpable with real content under normal viewing conditions.

Onboard upscaling for Blu-rays – and even DVDs – to 4K works well. Detail and texture is heightened without noticeably exaggerating any source noise.

Samsung's UBD-K8500 is therefore a bit of an AV bargain. It's obviously less exciting than rivals in terms of features and design, yet still delivers the picture impact that early adopters will crave ■



HCC VERDICT

★★★★★

Samsung UBD-K8500

→ £300 → www.samsung.co.uk

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Samsung HW-K950

Richard Stevenson auditions a Dolby Atmos soundbar setup that promises ease-of-use, multiroom integration and high performance



THERE'S A BIT of backstory to Samsung's HW-K950. Last year, the company invested in a dedicated audio development facility in Valencia, California. Here, it set about creating a new soundbar system – with Dolby Atmos playback in mind – from the ground up. The Sound Lab team then enlisted Hollywood studio engineers for fine-tuning and made sure the product got Dolby's official seal of approval, too. The result is a package featuring soundbar, wireless surround speakers and wireless subwoofer (with one amplifier for every one of its 16 drivers), offering 5.1.4 audio.

All this sonic seriousness comes at a serious price. £1,300 is up there at the very top of the market. You could, just about, get an AVR, budget 5.1 array and some upfiring units for the same money. Mind you, it wouldn't look so good and I'm not convinced it would sound as good either.

The main speaker is a large, well-built beast. It handles left, right and centre channels with a forward-facing driver array. Front height channels are tackled by full-range drivers on the bar's top section, angled to bounce Atmos info off a ceiling. The surround enclosures connect directly to your mains supply. These units feature full-range drivers for both front-facing surround channel and upward-

firing rear height channel duty. The sub is a more traditional design, being an upright cabinet with a single side-firing 8in driver.

In addition to Atmos, you get a raft of virtual upmixing modes that map to the full speaker array. There's no advanced speaker setup or room EQ, just channel level trims if you feel the need for a little tweaking.

Simple setup

Being used to the aggro and faffing time required to set up most cinema systems, the HW-K950 is a delight. After a bit of manual channel-level tweaking I felt good to go. Interestingly, with all levels set at 0dB out of the box, the Atmos height channels come in some 3–4dB hotter than the mains. This may be a function of my smooth, flat and relatively low ceiling, or just Samsung hammering home the height feature. Your experience may vary.

One gripe is that the HW-K950 does not support standby passthrough on its dual v2.0a HDMI. If sources are connected through it the soundbar has to be switched on and active to view, which means *EastEnders* in upmixed 5.1.4 is on the menu. Also note that the bar doesn't support DTS.

And thus endeth any negatives. Play a broadcast TV stereo source or native Atmos mix through the HW-K950 and it sets a new standard for convenience system performance. Gone is the slightly nasal sound often produced by small-volume soundbar cabinets, and the all-too-familiar mid-bass 'wump' of soundbar/sub combos is a thing of the past. The Samsung replaces these with

SPECIFICATIONS

DRIVE UNITS: 3 x 1.2in tweeters; 6 x 2.5in midrange drivers; 2 x 3in full-range drivers (soundbar); 4 x 3in full-range drivers (surrounds) **AMPLIFICATION:** 11 x 20W (soundbar); 6 x 35W (surrounds) **CONNECTIONS:** 2 x HDMI inputs; HDMI output; optical digital input; analogue 3.5mm; Bluetooth; Wi-Fi **DOLBY TRUEHD/ DTS-HD MA:** Yes/No. Plus Dolby Atmos **SEPARATE SUB:** Yes. 160W, 8in driver **REMOTE:** Yes. **DIMENSIONS:** 1,210(w) x 82(h) x 131(d)mm (soundbar) **WEIGHT:** 6.7kg (soundbar)

FEATURES: Dolby Atmos 5.1.4; Surround Sound Expansion Plus upmix modes; 4K passthrough on HDMI; network audio; Samsung Multiroom; LCD display

high-fidelity and incredibly articulate sound with real dynamics. It's underlying sonic performance, irrespective of surround sound effects, Atmos or other trickery, is excellent.

Even with stereo TV, the HW-K950 creates a natural, realistic sound with solid imaging. From outside the listening room, dialogue from the BBC's *Versailles* has a presence that sounds like a chat between real people on your sofa. That's a trick normally reserved for AVR and multichannel speaker setups. It is this naturalness and accuracy that makes the HW-K950 enjoyable with music too, where it delivers the goods much more like a decent stereo speaker system than a soundbar.

Atmos and 3D surround sound absolutely shines, with frankly outstanding positioning from a system with just three boxes and a sub. The cross-room pans of planes in the attack sequence in *Unbroken* swing properly overhead as bullets whistle through and hit objects seemingly in all parts of the room. Punch up the volume and you might have to back down the subwoofer level a little to keep things in balance, yet overall the HW-K950 grows in power and scale with increased volume, delivering delightful SPLs.

The Atmos effect wasn't overly sensitive of surround speaker position in my room, although giving them breathing space away from side walls resulted in a more convincing overhead effect. Comparing to my cinema room did reveal some shortcomings, with the HW-K950 not quite managing the fine detail, pin-point effects or front soundstage width of that system. But my four in-ceiling speakers alone cost more than the complete HW-K950 and certainly were not plug-and-play... ■

AV INFO

PRODUCT: Dolby Atmos soundbar system

POSITION: Samsung's premium soundbar, above its standard models

PEERS: Yamaha YSP-5600; Sony HT-RT5

HCC VERDICT



Samsung HW-K950

→ £1,300 → www.samsung.co.uk

WE SAY: More HDMI inputs, room EQ and DTS support would be nice, but that doesn't stop Samsung's system from being a genuine delight.

Canton DM55

Danny Phillips considers HDMI a frippery when faced with this soundbase's performance

THE CANTON DM55 is the smallest of three models from the German brand, alongside the DM75 and DM100, which are designed for bigger rooms and TVs. The £330 price is reflected in its opulent construction. Available in black, silver or white, the robust cabinet is topped by a thick slab of glass, providing a solid platform for screens up to 40kg in weight. Thick feet add to the DM55's premium feel.

The sense of luxury continues on the inside, where six drivers are pushed by a 200W amp, a more sophisticated configuration than most.

If the DM55 has an Achilles' heel, it's socketry. There are no HDMI ports, just optical, coaxial, phono analogue and a subwoofer output. Built-in aptX Bluetooth gives the DM55 a second life as a wireless speaker.

What I love about Canton's soundbases is their ability to combine huge sonics with the

refinement and expressiveness of decent-quality separates, and it's the case here – with *Star Wars: The Force Awakens* on Blu-ray the results are spectacular. John Williams' iconic fanfare is crisp and dazzling, projected with great purpose. Skip to any of the film's thrilling action scenes and the roaring spaceships, crackling lightsabers and explosions shoot into the room with bite and punch. As the movie rattles along at speed, so

does the Canton. Its natural agility and attack keeps you immersed and entertained. It's articulate too, picking out the texture of each character's voice,

human or otherwise. Such intelligibility is helped by Voice mode, which subtly but effectively enhances the midrange.

The DM55 also displays treble finesse, teasing out effects like the rustle of sand as BB-8 rolls along, and the whole thing is held together by the unit's excellent bass output. The thud and hum of lightsabers in a forest clash is tight and beefy.

Put simply, Canton's soundbase is one of the best options around at this price. Buy with confidence ■



HCC VERDICT ★★★★★

Canton DM55

→ £330 → www.cantondm.co.uk

SOUNDBASE SPEAKER/£550

Geneva Model Cinema

Geneva isn't a household name, but perhaps it should be, says **Danny Phillips**

GENEVA BRINGS A touch of Swiss sophistication to the soundbase market. The audio equivalent of a Hublot watch, its Model Cinema is precision-engineered for maximum listening pleasure.

A luxurious, high-end affair – its solid MDF cabinet is covered in black or white matt paint, which grants a sense of elegance – this pricey TV audio booster is rated to support screens up to 25kg, which rules out the largest TVs but proved fine for my 55in set.

Features include built-in Bluetooth and Geneva's catchily-titled Embracing Sound HD, which aims to expand

the soundstage width. A Voice mode boosts dialogue and TotalVolume equalises levels between different sources and programmes. Connection includes optical digital audio, but not HDMI.

Despite its slender dimensions, the Geneva musters a massive sound that brings movies to life in spectacular fashion. Huge dynamics and lashings of bass make action scenes sound dramatic and involving. It can go scarily loud, yet maintains intelligibility at lower levels, demonstrating excellent subtlety and range.

And the Geneva attacks midrange effects like a starved lion. Snappy gunshots and fiery, full-bodied explosions keep excitement levels high,

but they're tightly controlled and don't strain the eardrums. It's open and expressive but skilfully smooths off any harsh edges.

Voices are articulated with detail and authority, and despite the lack of dedicated tweeters, the 2in drivers do a good job with high frequencies. The Geneva offers levels of insight that some of its similarly-priced rivals don't manage.

Not only is this soundstage big and authoritative, it's also beautifully organised, allowing individual effects and voices to be heard amid the chaos. There's an even balance across the frequencies that results in a pleasing sense of cohesion.

Limited features and lack of HDMI count against it, but it's still easily recommended ■



HCC VERDICT ★★★★★

Geneva Model Cinema

→ £550 → www.genevalab.com

Acoustic Energy Aego Sound3ar

The Aego speaker line is updated to include a soundbar. **Mark Craven** gets acquainted

ACOUSTIC ENERGY'S AEGO Sound3ar (so named because it's part of the company's third-generation Aego range) makes a great first impression. This £200 audio booster has the style charm to appear more expensive. Black grilles, aluminium trim and rounded edges on both its subwoofer and soundbar mix together well. It does betray its price tag in terms of size, though. This is a compact combo – you can wield the 50cm-wide soundbar in one hand.

Setup is slightly unusual in that the two-channel 'bar' is a passive speaker, with all power and connectivity housed in its subwoofer playmate. A supplied phono cable connects the two. Around the

back of the woofer are optical digital audio and 3.5mm stereo inputs for source hookup. Bluetooth connectivity is also an option; HDMI, on the other hand, isn't.

This little system has the low-end weight that modern TVs generally only dream of, and bolstered by the rumblings of the subwoofer, the speaker bar, which comes in at 250Hz, manages to craft a sound that feels bigger than its dimensions suggest.

Regular TV fare suddenly sounds more real, with voices gaining authority.

Nor is the subwoofer a one-note wonder – the disco/funk tracks that litter the *Beverly Hills Cop* soundtrack find it

carrying the tuneful basslines and kickdrums. And sticking with that '80s actioner, the Sound3ar shows a nice balance between sub and bar, and enough clarity in the mid and upper frequencies to make the truck chase in the opening act, and the mansion shootout towards its end, engrossing movie moments. It's eager to please too, favouring dynamic punch over subtlety, to the point where it can sound a little brash.

The sub simply doesn't have the muscle to impress in terms of depth, though, and EQ is limited to just four bass settings. Additionally, the soundstage here is rather tight. I like the energetic feel of the system, but wouldn't have minded more horizontal dispersion and stereo imaging ■



HCC VERDICT



Acoustic Energy Aego Sound3ar
→ £200 → www.acoustic-energy.co.uk

SOUNDBAR/£850

Cabasse Stream BAR

Movies, TV and networked music are all fair game for this French fancy, says **Danny Phillips**

CABASSE'S STREAM BAR is a step-up soundbar to add to the growing list of 'audiophile' options. At £850, this swanky clutter-buster certainly isn't cheap, but does strive to be different with DLNA streaming with hi-res audio support, and multiroom functionality with other Stream products.

There's a decent, but not class-leading, array of sockets. Optical digital audio, 3.5mm minijack and Ethernet ports are joined by a single HDMI input and an output with ARC functionality.

In terms of drivers, the bar is equipped with two tweeters and four mid/bass units, driven by 80W of three-way active amplification. The subwoofer claims another 100W of power for its 6.5in woofer.

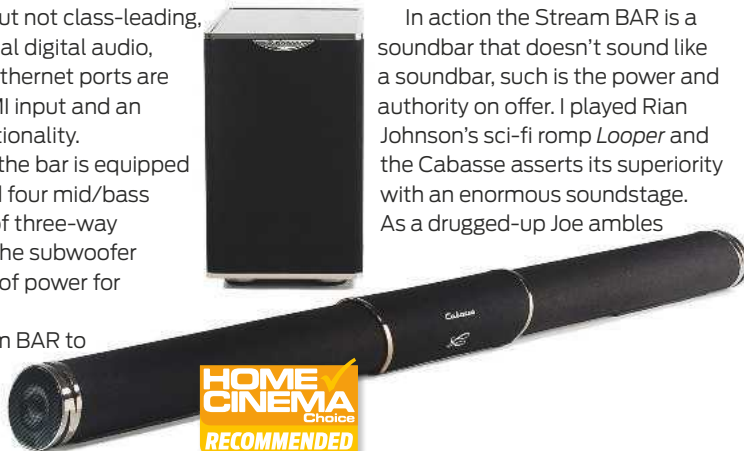
Connect the Stream BAR to your network and, via the magic of DLNA, you can play music

stored on PCs and NAS drives (including hi-res FLAC, WAV, ALAC and AIFF up to 96kHz/24-bit) using the Stream Control iOS/Android smartphone app. The software is easy to use, with a streamlined layout making it a doddle to find what you want. Deezer, Qobuz, Spotify, Tidal and internet radio also feature.

In action the Stream BAR is a soundbar that doesn't sound like a soundbar, such is the power and authority on offer. I played Rian Johnson's sci-fi romp *Looper* and the Cabasse asserts its superiority with an enormous soundstage. As a drugged-up Joe ambles

through *La Belle Aurore*, the system builds an engulfing, bass-rich wall of sound from the club's thumping music. And while it rattles out action effects with vigour, the Stream BAR is equally adept with the small stuff, sniffing out nuances in movie mixes and demonstrating real subtlety.

The sub doesn't stick out in a bad way. Every sound is given suitable, solid weight, and the relatively small driver has no problem with overhang. Its speed and rich tone make it suitable for music use, too – the Cabasse knows how to handle a tune. Frank McComb's acoustic version of *Someday We'll All Be Free* sounds wonderful, with its terrific imaging and an open presentation. Crowd applause pops with sparkling clarity ■



HCC VERDICT



Cabasse Stream BAR
→ £850 → www.cabasse.com

Yamaha YSP-1600

Yamaha claims the YSP-1600 kills the need for surround speakers courtesy of some clever DSP and its multidriver array.

Mark Craven puts it to the test



ANYONE DRAWING UP a mid-range soundbar shortlist will no doubt be intrigued by Yamaha's YSP-1600. Selling for approximately £500, it shares some of the DNA of the brand's higher-end models (the YSP-2500 and YSP-5600) but leaves more cash in the bank for Blu-rays. There are plenty of other prospects at this price, however, so can it do enough to make it an essential audition?

Box of tricks

Yamaha describes the design as 'slim', but I'd argue that's stretching the terminology a bit. The 6.5cm height didn't pose any problems for me regards my TV's IR sensor, yet the design is boxy rather than curved or angular. It feels pretty solid, though, and there's a decent amount of space where the rear connections are to make source hookup easy. And it's relatively well-connected. An optical digital audio input provides a simple connection to a TV, while a single 4K/HDCP 2.2 HDMI input is there for external devices.

The adjacent HDMI output supports ARC. Further sockets are an analogue audio minijack, Ethernet port and a sub output. The latter is there because, unlike the costlier YSP-2500, this model ships without a subwoofer. Instead, the YSP-1600 mounts twin 3.25in bass drivers, rated at 30W-a-piece, at either end of its metre-long cabinet.

Centrally positioned are eight front-facing 1.1in beam drivers.

Wi-Fi and Bluetooth are joined by integration into Yamaha's MusicCast multiroom eco-system.

I began by connecting the YSP-1600 via optical to a Samsung TV, and

fed it a Sky HD showing of the Vin Diesel sci-fi *Babylon AD*. I was rewarded with an enthusiastic and relatively dynamic sound. Diesel's gruff dialogue was well-projected and resonant. Meanwhile, the packed locales of the dystopian future Manhattan buzzed with detail effects. The sounds of Diesel chopping up and pan-frying a rabbit in red wine made me hungry. High-frequencies are crisp, bordering on bright.

With the Blu-ray of Ridley Scott's *The Martian* via HDMI, the impressive low-end punch of the YSP-1600 came to the fore. There's a nicely rounded nature to the Yamaha's bass, and it mixes with the higher frequencies well, as opposed to some systems where the separate bar and woofer can sound like distant cousins. The frequency response is rated down to 50Hz, which isn't monstrously low, but I'd suggest only those stepping down from a dedicated woofer will feel short-changed; there's enough depth here to lend cinematic impact to the stranded astronaut's endeavours, and a whole load more than whatever your flatscreen TV is proffering. When the MAV conducts its rocket-powered takeoff, the Yamaha has grunt to capture the scale of the event.

The Martian's score benefits from decent mid-range presence, although the 'bar isn't the most musically-minded performer out there. Barb Jungr's Dylan cover *Sara* (SACD, Linn Records) enjoyed a robust bottom end but needed more subtlety in the vocals and piano.

At the left-side of the fascia is a bank of green-glowing status LEDs. These provide an overview of what the 'bar is doing but I doubt you'll remember which one represents which source. It's easier to hit the button on the handset to make sure.

SPECIFICATIONS

DRIVE UNITS: 2 x 3.25in woofers; 8 x 1.1in beam drivers **POWER (CLAIMED):** 80W **CONNECTIONS:** HDMI input; HDMI output (ARC); optical digital audio input; Ethernet; analogue audio minijack; USB service port; subwoofer output **BLUETOOTH:** Yes **WI-FI:** Yes **DOLBY TRUEHD/DTS-HD MA:** No/No **SEPARATE SUBWOOFER:** No (phono output) **REMOTE:** Yes **DIMENSIONS:** 1,000(w) x 65(h) x 130(d)mm **WEIGHT:** 4.7kg

FEATURES: MusicCast integration; beam array selection; Music, Movie, Game, Sports and TV presets; 4K & HDCP 2.2 HDMI

Also on the zapper are a subwoofer level adjustment, and keys for the YSP-1600's sound presets. These are Movies, Music, Game, Sports and TV Program. The Music setting is the most aggressive, imparting an echoey quality that's perhaps meant to simulate a live performance. With music it's a bit odd; with TV or films it's unpleasant (hi-fi purists can run the soundbar in straight stereo).

In terms of output, this Yamaha hits the mark. I found it could be pushed without fear, retaining its balance and clarity as the volume creeps higher.

As for the 'bar's surround ambitions, dampen your expectations. While the YSP-2500 and YSP-5600 pack 16 and 44 beam drivers respectively, this unit's set of eight gives Yamaha's time-/direction-controlling DSP less to work with, and there's no IntelliBeam automatic room analysis here to help you out. There's a channel level adjustment, though, so you isolate surround left/right channels to get a sense of where they are coming from.

I never got a wraparound performance I was entirely satisfied with, even after studious placement, but there's certainly an immersive soundfield here, as opposed to the experience of merely being shouted at by a box at the other end of the room. During the Matt Damon sci-fi, I was surprised by the YSP-1600's ability to place me amidst the swirling dust of the Martian storms, but sequences that feature really specific audio pans weren't its forte.

This doesn't mark the YSP-1600 down as a lost cause, though. This is an enjoyable listen and multiroom-ready ■

AV INFO

PRODUCT: Beam array soundbar

POSITION: Mid-range, but part of Yamaha's MusicCast line

PEERS: Orbitsound A70; Sony HT-RT5; Q Acoustics Media 4

HCC VERDICT



Yamaha YSP-1600

→ £500 → www.uk.yamaha.com

WE SAY: The surround feature isn't entirely convincing, but this is a commendable soundbar. MusicCast multiroom functionality is a boon.



Sky Q Silver

The Sky TV viewing experience takes a massive leap forward with the 4K-capable Sky Q, says **Steve May** – once you've mastered the new remote

TO BE HONEST, I was both excited and anxious about using Sky Q. From its distinctive handset to Planner grid, classic Sky has been a home comfort for the best part of a decade. The idea of junking it in favour of some new-fangled product seemed a tad reckless. But the lure of a hybrid system mixing satellite delivery with streaming is too tempting to ignore – as is the arrival of 4K content.

The Sky Q ecosystem is different to what we've had before, not least when it comes to multiroom viewing. Until now, that's been predicated on the clumsy idea of multiple cabled boxes working in splendid isolation. Sky Q reworks the concept for the Netflix generation. The satcaster calls it Fluid Viewing, and there's more to it than just a natty slogan.

With Sky Q, the Silver PVR acts as a hub for connected Sky Q Mini boxes. These essentially stream content from the Silver. Not only can you watch live TV on a Sky Q Mini, but also your own recordings and on-demand material. The experience is transformative.

Beating the Q

When Sky Q is installed the first thing to go may be your old dish. The new platform requires an all-new wideband LNB, and to fit it my Sky installers simply swapped out the entire dish ('Much easier,' they explained). Existing cabling, however, remains intact. The Silver PVR still requires two feeds, but these now download the entire satellite stream to the box itself.

The PVR is considerably slimmer than the old Sky+HD box, yet it still houses a 2TB drive, in addition to 12(!) tuners.

Not all of these are currently used, but you can now record four programmes simultaneously (a feature I've longed for more than you might imagine) and watch a fifth, while streaming to two Sky Q Minis. 300GB of that Silver hard drive space is reserved by Sky for push content.

The box has an elegant design with a silky finish and embossed logo. The rear panel offers twin F-connectors, HDMI, Ethernet and an optical audio output. There are also two USB ports (not currently functional) and a second, covered HDMI. This transpires to be an input, presumably to loop through another HDMI device at some point. There's Wi-Fi too, working 2.4GHz and 5GHz bands concurrently.

Obviously Sky would like its subscribers to buy into its entire broadband ecosystem, but this isn't a prerequisite. I used a third-party ISP.

The system comes with an on-trend Bluetooth remote control. Called Q Touch, it has an integrated mic for voice search to be added at some point in the future. Traditionally I hold little truck with such devices, much preferring retro IR zappers, but I've got to admit to rather warming to it. It certainly takes a little patience to master, but the trackpad is astonishingly responsive. You really don't need to paint in broad thumb strokes. I can now skate about quite effortlessly, but there is one manoeuvre I still find tricky – fast-forward. This is driven via a touch-sensitive ring around the main pad and requires effort to manage. I've been overshooting where I want to get to.

The Sky Q Mini is, unsurprisingly, a good deal smaller than the Silver. But it's a cosmetic match, with HDMI,

AV INFO

PRODUCT:
Satellite TV/
streaming with
wireless multiroom

POSITION:
Sky's new top-tier
package. Sky+HD is
still an option

PEERS:
Virgin Media TiVo;
BT TV

Ethernet and optical audio output. It's also Wi-Fi-enabled. The Mini doesn't come with that Bluetooth controller, preferring an IR remote with traditional buttons. This can also be used with the main box, which is useful if you or a family member can't get on with the Q Touch's trackpad.

A WPS button on the Mini pairs it with the main Silver box. In most circumstances, it'll communicate over Wi-Fi but in difficult locations you can network over a LAN.

It should be noted that the Sky Q Mini is not a 4K device. And with a limit of one Silver box per household, you won't be watching 4K on multiple screens around your home anytime soon.

A whole new world

As well as fresh hardware, Sky Q features a new interface, and it's as pretty as a picture. There's thumbnail art for practically everything, with dollops of metadata gluing the whole shebang together. Yet while there can seem a dizzying amount of functionality, it doesn't take long to absorb.

Click the Sky logo on the remote and you're immediately in the Recordings menu. Shows are thumbnailed to the right, with the most recent on top. Typically within Sky Q, menu items stand vertically, and you navigate horizontally. If you don't want to see your recordings chronologically, you can filter everything in an A-Z list. You can also see at a glance what's scheduled to record.

'The freedom afforded by wireless multiroom to watch Sky anywhere around the house is simply brilliant'

There're cool visual cues to help move you around. When there are deep menus to explore you see what appears to be a stacked panel. And to help remind you where you are, your 'cursor' is an arty starburst effect.

Hit the remote's Home button and you're presented with a genre-based content tree, topped by the programme guide. Below this are channel catch-up players (amounting to 38 at the time of writing), as well as boxsets, movies, sport, kids and music menus. As with Sky+HD, you can view your photos via the Sky box. However, now there's also AirPlay and Bluetooth music streaming support, which will be useful to some.

Of course, a TV platform built on an IP infrastructure can leave itself vulnerable. A broadband outage resulted in my Q UI largely blanking out. While recordings, live TV and programme guide were unaffected, other functionality vanished until the broadband connection was restored.

There are new areas to investigate on the Q platform. The My Q tab takes you to shows you may be halfway through, or presumptuously offers up new episodes for stuff you've recently watched. The 'i' button also calls up an info pane across the bottom of the screen, with a description of what you're viewing, as well as what comes next. And Sky Q makes a lot of assumptions. For example, when you record a new show it puts a series link on by default.

Where the system really becomes transformational is with multiroom. The freedom to watch Sky anywhere around the house is brilliant.

Content is streamed across a locked 5GHz channel. If you have more than one Mini, perhaps two working in second-floor rooms, they form a mesh network. This

SPECIFICATIONS

HDD: Yes. 2TB **CATCHUP CHANNELS:** Yes. BBC iPlayer, ITV Hub, Sky One, Sky Atlantic, Sy-Fy and so on... **CONNECTIONS:** HDMI output (plus an HDMI input as yet unused); optical digital audio output; Ethernet; 2 x USB (for future use) **DIMENSIONS:** 232(w) x 155(h) x 34(d)mm **WEIGHT:** 1.7kg

FEATURES: Bluetooth and Apple AirPlay streaming; record four shows, watch a fifth live; MiMo dual-band Wi-Fi; 4K playback; Bluetooth Q Touch controller

approach is a smart way to reinforce distribution (it's the same idea popularised by Sonos). And if you have a Sky router, Minis become Wi-Fi hotspots.

The viewing experience on these second-room boxes is virtually identical to that on the main Silver, albeit without any PIP effects. The Q menu is identical, with all your recordings waiting to be watched or resumed. Miraculously, there's no evident sacrifice in image quality. Everything I streamed looked and sounded the same. Watching in HD, I didn't experience any buffering or image degradation. It seemed like a perfect mirror.

But that's not to say I didn't experience some hiccups. A 'Network proximity' error message appeared when for some reason my Mini lost a connection with its parent, and I experienced some shuddering of the onscreen UI – literally a juddering as I nav'd around – although this never affected the image.

Another niggle is that Sky doesn't allow subscribers to mix its new hardware with existing Sky+HD gear. This might feel restrictive if you currently live with multiple Sky+HD boxes – after all that's a lot of recording capacity to lose. However, with the massive increase in on-demand content, and the ability to quaff recordings anywhere around the house, that loss of physical recording capacity isn't a deal-breaker.

What's more, you don't need a Mini to watch recordings remotely. The Sky Q app (for iOS and Android) mimics the Q interface and offers the same niceties. You don't even need to log in when you're on the same network, the app just finds your Silver box and you're connected. You can also download recordings to watch away from home.

Although the Q box features new silicon, image and audio quality prove to be indistinguishable from my previous Sky+HD box. To be honest, I stopped watching Sky's SD channels some time ago, and can merely report that they look as fuzzy here as I remember them to be. But the Sky HD bouquet looks terrific, 4K content (while not HDR) is beautifully crisp and Dolby Digital 5.1 is thoroughly entertaining. The Q logo spinning a vivid blue when recordings are played is a perennial distraction when the lights are low, though.

Startling success

The introduction of Sky Q is a bold move by the satcaster, and one that seems to have been meticulously planned. As a step-up from Sky+HD, it's startlingly successful. I can't wait to see what's Qoming next... ■

1. Sky's new Q Touch remote links via Bluetooth and uses a touchpad controller

HCC VERDICT

★★★★★

Sky Q Silver

→ £Variable setup cost, plus subscription → www.sky.com

WE SAY: Sky Q is a brilliant mix of linear TV and on-demand, with seamless multiroom streaming. It's probably the most advanced TV system in the world.

REL S/3 SHO

REL's Serie S subwoofers have been given an overhaul to deliver what the bass specialist dubs 'Super High Output.'

Richard Stevenson puts this to the test with the S/3 SHO



HERE AT HCC we rather liked REL's Serie S subwoofers, so when the company announced a Super High Output overhaul of the S/5 and S/3 models we had questions. Could they be better than the original? Would the price remain competitive? I'm happy to reply in the affirmative.

Auditioned here is the REL S/3 SHO. At £1,450 it is around £150 more than the original S/3 yet brings with it a new Next Gen II 400W Class D amplifier, updated driver and revised electronics. The promised result is all the subwoofing goodness of the predecessor S/3 but with more bang for your buck.

Cosmetically things remain unchanged, save for an SHO legend appearing on the rear. It is the same exquisitely crafted, near cube-shaped cabinet with one of the best piano black finishes on any loudspeaker on the market, irrespective of price. The trim is no less lush, with chunky, brushed aluminium feet,

chrome side handles to help move its near 28kg mass about and a bold ingot of a REL badge in the top. The latter two are also, I'm told, key components in damping the substantial cabinet, which is over 40cm in all dimensions.

Behind the massive grille is REL's 10in, long-throw driver. This

has a pressed aluminium cone and a rubber roll surround the size of a kids' bike tyre. The cone's smooth profile and matte aluminium finish are easy on the eye and, if you turn the S/3 turtle, its 12in passive cone on the bottom is just as alluring. If you want to run this beast with the grille off, though, the main driver's gold colour chassis and bolt slots in the rubber surround are a bit of a mark down against an otherwise gorgeous piece of hardware.

Proving this model is as much go as it is, er, SHO, it's 400W amp is coupled with REL's custom filter network and the option of line-level stereo, line-level LFE/L or high-level inputs; the latter via a Neutrik connector cable, wired directly to your main amplifier in parallel with the front main loudspeakers. Controls are individual line/high-level volume, reversible phase and variable crossover. For an extra £230, you can make the S/3 SHO wireless with REL's LongBow wireless transmitter.

Carpet bomber

Setup and positioning proved to be remarkably easy, although my rather uneven parquet floor meant some use of a chunk of cardboard to keep things stable. REL does supply traditional carpet-piercing spikes that attach to the feet but recommends you use this woofer without unless you have a shag pile deep enough to lose a hamster in. The reason being that the downward-firing driver requires an air space the height of the feet to perform at its best.

Within 10 seconds of letting rip with a choice cut from *John Wick*, the S/3 SHO was

SPECIFICATIONS

DRIVE UNITS: 1 x 10in front-firing continuous profile aluminium cone long-throw driver; 1 x 12in down-firing carbon-weave passive radiator **ENCLOSURE:** Sealed, with passive radiator **FREQUENCY RESPONSE (CLAIMED):** 22Hz (-6dB) **ONBOARD POWER:** 400W Class D amplifier **REMOTE:** No **DIMENSIONS:** 406(w) x 424(h) x 464(d)mm **WEIGHT:** 27.86kg

CONNECTIONS: LFE phono input; stereo phono line-level input; Neutrik Speakon high-level input; SMA antenna connector for use with REL LongBow wireless unit

delivering big LF effects. So much so that as Wick's car drops into the concrete drain, the resulting explosion blew the grille clean off. Clearly, I hadn't pushed the lugs fully home when I replaced it...

Yet sheer grunt and heft is not the S/3's trump card. What I really noticed, particularly in comparison with my usual 18in-driver Velodyne, was the tautness and impact of its output. Bass effects like gunshots are its *forte*. The REL's super-fast transient attack gives these a sense of reality rather than just bludgeoning you with a wall of LF noise.

It's a cracking experience and certainly goes a long way to deliver on REL's promise to combine the slam of a 10in sealed box sub with the scale of a 15in driver. I'm not convinced it plumbs the depths to the same extent as a larger model (REL rates it down to 22Hz at -6dB), but it certainly impresses in terms of impact and lack of overhang.

For typical mid-sized UK rooms, REL may have hit on pretty much the perfect-sized sub. Compared directly with my 18-incher, I began to appreciate the S/3 SHO's lightning-fast and evenly-balanced approach to LFE.

The fire-fight shots around the night-club swimming pool in *John Wick* proved this point, and the S/3 SHO was equally good romping through some older favourites, like the new Atmos-remastered *The Fifth Element* and space drama *Gravity*. While the latter film lacks a constant soundtrack of bass, the sound designers use LFE to subtly underpin effects and atmosphere. The REL's superior tautness and articulation is in evidence here, adding that extra dimension to the mix without sounding disconnected. And if you regularly listen to music on your system with a subwoofer in play, those attributes translate into beautifully poised and eloquent bass ■

AV INFO

PRODUCT: Premium 10in subwoofer with wireless option

POSITION: Middle of the new SHO updates to the Serie S range

PEERS: B&W PVID; Velodyne SPL-1200

HCC VERDICT



REL S/3 SHO

→ £1,450 → www.rel.net

WE SAY: REL's SHO upgrade builds on the original S/3 with taut, fast bass and a scale to match larger subwoofers. Gorgeous styling.

SVS PC-2000

Do good things come in, er, round packages? **Ed Selley** and SVS wreck it with Ralph

AMERICAN BRAND SVS sells a series of upright cylindrical subs to save floor space, of which the PC-2000 is the smallest. It stands nearly a metre tall, though, so will only hide behind the largest of sofas.

The sub uses a 12in driver (downfiring) supported by a sizable rear-mounted port. Power is supplied by SVS's usual 500W Sledge DSP amplifier. Controls are volume, frequency cut and a variable phase. There's no remote.

SVS says the PC-2000 is 'better looking' than its previous tube subs, but it's still not glamorous. However, there are some excellent touches, such as the rubber cone feet that give the driver enough room to



manoeuvre, and the nicely laid out control panel.

Despite its looming presence in a room, the PC-2000 initially stands out because of how well it integrates with my other speakers. The effects-laden 'Hero's Duty' sequence in *Wreck it Ralph* on Blu-ray comes across with control and cohesion, laser blasts and pounding soundtrack given slam and scale. The SVS goes impressively deep as you might expect (suggested frequency response is a touch lower than the more traditionally designed SB-2000 and PB-2000 siblings) and will hit hard while it does so. Nor does this low-end

passion have any negative effect on its performance up to the 90Hz crossover I set with my Elipson speakers. There's impact through the range, and its definition is equally impressive; the PC-2000 renders gunfire and the score distinct from one another, without losing the signature of either.

It also has its limits, though. When you really lean on the PC-2000 and ask it to handle the sci-fi bassfest that is *Dredd*, it turns in a fine performance with effects but the sustained bass notes in the industrial score sounded a little boomy. I was aware of this in similar material across film and TV. It isn't a bad sub musically, just a little obvious at times, and therefore better suited to authentic home cinema than 2.1 use ■

HCC VERDICT



SVS PC-2000

→ £800 → www.svsound.com

SUBWOOFER/£1,300

ELAC SUB 2070

Ed Selley lets his smartphone join the fun with ELAC's app-compatible subwoofer

WITH ELAC'S SUB 2070, things aren't all they appear. First up, it mounts two 10in drivers in vertical rather than horizontal opposition. Both drivers are powered by a 600W BASH-type amplifier, and work in



a push-pull configuration. ELAC claims a low-end reach that extends to 18Hz.

Secondly, the back panel only has a power switch by way of controls, with no volume or crossover settings. Why? Because when you power the 2070 on for the first time, it will seek to connect with an Android/iOS device running the free ELAC app. Then, with the sub talking to the app, the ELAC becomes a rather clever beast. You can use your phone's microphone to perform an EQ setup, use the app to adjust the volume – and mute it – and choose between four pre-programmed modes.

With a basic EQ sweep performed, the SUB 2070 manages to impress from the outset even before you start tinkering with the app. It starts and stops with commendable dexterity, and this means that frantic activity onscreen retains its sense of energy and relentlessness.

This agility also proves welcome in my regular demo disc, *Whiplash*. This drumming drama is not a test of truly seismic bass, but

the SUB 2070 was still called upon to be a meaningful part of the basslines of the mix, and had enough instrumental detail. The app was useful with *Pacific Rim*, too, letting me gently wind the sub's level back to better handle this room-shaking sci-fi.

Comparing the ELAC before and after EQ suggests the feature is worth the hype. Two measurements – one close to the sub, the other at your listening position – are taken before ELAC's EQ works to iron out issues created by room reflections/standing waves. In my room, the EQ'd response seemed to be tighter with less room interaction.

The SUB 2070 is not cheap and a bit heavy, but has a degree of flexibility that could be just the ticket in challenging rooms and spaces ■

HCC VERDICT



ELAC SUB 2070

→ £1,300 → www.hifi-network.com

Sony SRS-ZR7

Mark Craven finds this hi-res audio wireless speaker is full of features and sweet sounds

SONY'S DRIVE TO bring the joys of hi-res audio to the mass market continues with the £260 SRS-ZR7, a Bluetooth/Wi-Fi speaker that slips into place below the £600 SRS-X99. It's described as portable, but it requires a mains connection. It's compact enough to be an easy move-around, though.

When it comes to performance, this speaker proves a lot of fun. The five-strong driver array (including a woofer) and unspecified power plant work to deliver a dynamic sound that's great considering the price, relishing crisp, high-frequency effects and thudding bass. Even called into action streaming daytime radio, it unearths low-end details in advertising jingles you may not have realised were there. Indeed, it does have a slightly thick sound; dance music junkies will appreciate the thump it brings to kick drums, but I found Johnny Cash's acoustic *The Man*



Bluetooth, hi-res, USB, DLNA, HDMI – it's all here!

Comes Around sounded a bit bass-heavy. This can be overcome, though. Once added to your network (over Wi-Fi or Ethernet), Sony's SongPal app offers a custom EQ mode, plus various presets.

While the ZR7 works fine as a Bluetooth/GoogleCast speaker – with Sony's DSEE HX processing to massage low-res files – real rewards come from hi-res sources. It has the

clarity of presentation to make you want to feed it a rich diet, even if the overall volume it can muster won't shake the foundations and stereo spread is predictably narrow. USB-A/B inputs help to get you hooked up; file support includes FLAC, ALAC and DSD.

The fact that this desktop speaker also has an HDMI ARC input, allowing for TV connection, is just another reason to give it consideration. Overall, this is an impressive addition to Sony's lineup ■

HCC VERDICT



Sony SRS-ZR7

→ £260 → www.sony.co.uk

WIRELESS ROUTER/£160

Asus RT-AC87U

Feature-laden and a slick performer, this router is hard to beat says **Benny Har-Even**

WITH ITS FLAT, angular design and four antennas, Asus's RT-AC87U has an aggressive look, which is perhaps what you want if you're investing in an aftermarket router to beef up your home network. Build quality seems average, though, thanks to a plasticky feel, and one antenna drooped no matter how much I tightened it. Hey, it happens.



There's an array of LED activity lights at the front, but I was grateful for the button that enabled me to turn them off so I could watch movies without being distracted by a disco show. Another button on the front disables wireless, though I'm not sure why you'd want to do that.

The Asus claims speeds across its dual bands of 2,334Mbps and boasts 4x4 MU-MIMO technology. In English this means it can communicate with up to four devices on the network directly without them having to share streams. However, client devices need to support MU-MIMO too, which is something for the future. USB 2.0 and 3.0 inputs are provided.

The Asus proved easy to set up and impressed with its well-designed, feature-packed interface. A QoS feature makes it simple to prioritise your network for different tasks, such as streaming, gaming or VoIP.

Remote access can be enabled and there are effective parental controls that can be established by content category or by device.

The router creates separate 5GHz and 2.4GHz networks as well as a guest network. Performance was excellent, offering lightning-quick networking and not collapsing when streaming to multiple devices. Transferring a 1.22GB file all the way to a laptop in a shed at the end of the garden wasn't a snoozefest either.

The RT-AC87U therefore makes for a compelling package. Beyond build quality worries, it doesn't put a foot wrong. Coverage, performance and usability all impress. If you are on the hunt for a router upgrade, it's worth your consideration ■

HCC VERDICT



Asus RT-AC87U

→ £160 → www.asus.com/uk

DVDO iScan Mini

John Archer knows that not all 4K TVs are created equal. So does this scaler...

WHILE 4K/ULTRA HD TVs have been around for years, native 4K sources are still relatively scarce. Especially if you can't afford an Ultra HD Blu-ray player, a Sky Q Silver box and subscription UHD service, and/or Netflix and Amazon 4K streaming.

Cue the DVDO iScan Mini 4K scaler. Plug an HDMI source into this tiny box and it can apply VRS ClearView image processing technology, developed by Silicon Image, to that source before passing the pictures to your 4K TV. Your TV will carry out its own upscaling, of course, but the idea is that the iScan Mini's VRS engine should do a better job – especially if that telly isn't a high-end model.

The iScan Mini doesn't just work with 4K screens, mind you. It can scale sources to a huge variety of display resolutions and refresh rates, so could work with an HD display. Extensive user tweaks let you manually adjust scaling strength, noise reduction, etc.



Feeding the *Coraline* Blu-ray through the iScan Mini into a Samsung KS9500 4K TV, the Mini's 'Low' Enhancement mode preset only delivered a small – but still noticeable – improvement in sharpness over the TV's own scaling. The High enhancement setting, though, has a dramatic effect, making even the Samsung's excellent upscaled picture

(and that of a Panasonic UB900 UHD Blu-ray player) look notably softer and less detailed, as well as less deep. These improvements, though, are accompanied by distracting fizzing grain. I found the Low preset and the Samsung TV's own upscaling more natural.

This gizmo is probably better used with 'mainstream' 4K TVs. It delivered a marked improvement in Blu-ray picture quality on both a budget Finlux 4K TV and a lower mid-range Panasonic DX650. *Coraline's* images appeared sharper, cleaner and more nuanced. It also upscales standard-def sources to 4K far better than any 4K TV I've seen, so is great for those occasions when SD really can't be avoided.

An impressive little add-on ■

HCC VERDICT



DVDO iScan Mini

→ £275 → www.karma-av.co.uk

UNIVERSAL REMOTE/£280

Logitech Harmony Elite

Multiple zapper-phobe **Adrian Justins** gets to work streamlining his AV setup

THE HARMONY ELITE has tricks up its sleeve that make it the most advanced zapper the specialist brand has ever made. It is, in fact, a bundle of two separate Harmony products, namely the Harmony 950 remote (£200) and the Harmony Hub (£100), and Logitech claims it's compatible with more than 270,000 devices from around 6,000 manufacturers. It can control your lights, blinds, heating and home security according to custom schedules or in response to sensors. In other words it's a remote control for just about anything electrical in your home – assuming you've bought in smarthome gear from the likes of Philips Hue, Nest and Honeywell.

The hub receives RF signals from the handset and can control kit

hidden from view with commands passed on using a built-in IR transmitter or one of two IR blasters. Setup requires use of either a computer connected to the handset by USB or you can use the smartphone app, which is clean and uncluttered; the home page is divided into Devices and Activities.

Setup is relatively simple: you enter the model names and numbers of your gear and the app tests a few basic commands before guiding you on to the activities side of things. To watch TV I was easily able to instruct it to switch on a Samsung screen, Yamaha soundbar and Sky box and tune in to BBC Two HD as a default.

You can name and create your own

activities, allocating each one to unused buttons on the remote, or you can activate them via the touchscreen. To set up a 'Watch Netflix' activity all I had to do was tell the app which kit to use and it automatically launched the Netflix app.

For watching movies I easily programmed the remote to kickstart the TV, Onkyo AVR and Sony BD deck, later adding a command so that the disc loaded from the home screen, allowing time for the box to boot up properly.

The colour touchscreen responds well to swipe-and-tap gestures, and chooses the correct device based on the action. Clever.

This is a versatile, user-friendly and almost faultless alternative to using multiple separate remotes. Pricey, but impressive ■



HCC VERDICT



Logitech Harmony Elite

→ £280 → www.logitech.com

JBL Boost TV

Adrian Justins believes JBL's modest soundbar gets the job done

NO WIDER THAN a budget Blu-ray player, the JBL Boost TV is about as compact as soundbars come. And its 30W power output is not that much more than the usual 20W that's claimed by most TV screens, and nor does it have a separate subwoofer. However, its dual bass port design, cabinet shape, DSP and Dolby Digital decoding give it reasonable advantage in the sonic stakes.

The Boost TV offers a single optical input and has Bluetooth for wireless listening from phones, tablets, etc, with the handy option to set automatic Bluetooth switching if a paired device starts playing music. Plus you can add further JBL Connect speakers (with Bluetooth) to create a multi-speaker scenario, albeit of limited range compared with Wi-Fi models.

The blaster button remote is a shocker, with titchy lettering and a vague response



from the 'bar when adjusting volume, but you can teach the Boost TV to respond to volume commands from your telly's handset. This would be my suggestion.

The JBL's soundfield is understandably narrow but there's plenty of clarity on offer. The Boost TV picks out the individual elements of *Fargo*'s TV soundtrack with

The Boost TV is just 37cm wide

precision, such as a barn door creaking, crows crowing and horses baying in the background. Footsteps in the snow, a car door thudding and an engine turning over all add to the atmosphere of the show. Dialogue is nice and resonant, too.

The lack of sizeable bass drivers is apparent with more explosive material such as *The Expendables 3*, where even a missile hitting the docks feels a bit flat and shoot-outs seem sonically cramped. Yet this 'bar is more about installation possibilities (it's ideal for a second room) than sheer, barnstorming performance ■

HCC VERDICT



JBL Boost TV

→ £170 → www.jbl.com/uk

DIGITAL AUDIO PLAYER/£400

Pioneer XDP-100R

Ed Selley puts hi-res audio – and more – in his pocket with Pioneer's Android innovation

THIS PORTABLE PLAYER has a few features that suggest Pioneer has been paying attention to criticisms levelled at rivals.

First up, the XDP-100R is built around the Android platform but uses the solid Lollipop OS, which makes for a fast and slick UI. This is mated to a 720 x 1,280 screen that occupies pretty much the entire front panel. So while audio is the main focus, video isn't an afterthought.

Internally, the Pioneer wields an ESS Sabre 9018K2M DAC and a (rather less commonly encountered) 9601K headphone chip. All major audio formats are supported, including MQA. Internal storage is a slightly

stingy 32GB but thanks to two microSD slots maximum capacity is a solid 432GB.

Sonically, the Pioneer does a great deal to justify its existence. The built-in music player app is a doddle to use and sounds clean and enjoyable. The player comes with Tidal, Spotify and Qobuz installed and while these can't use the in-built EQ system, they do a reasonable job with the added bonus of extremely easy music-management.

Hi-res material shows the Pioneer's strong side. There's a wonderfully natural and smooth presentation that springs good detail and impressive bass extension from your digital library. Yet one downside is that

compared to something like Sony's more expensive NW-ZX2, the Pioneer doesn't feel as effortlessly powerful.

Performance with video is a cut above rivals and competitive with a similarly-sized mobile phone. My Ultraviolet rip of *Fast & Furious 7* was colourful and free from blurring, and the decoding horsepower of the XDP-100R means the soundtrack feels bigger and more composed than would be the case on a smartphone. iPlayer and similar on-demand apps (there's access to Google's Play Store) are further avenues for telly addicts.

This is therefore a neat mobile video/app platform as well as an excellent hi-res audio companion. Invest in one and you can take the strain off your smartphone ■



HCC VERDICT



Pioneer XDP-100R

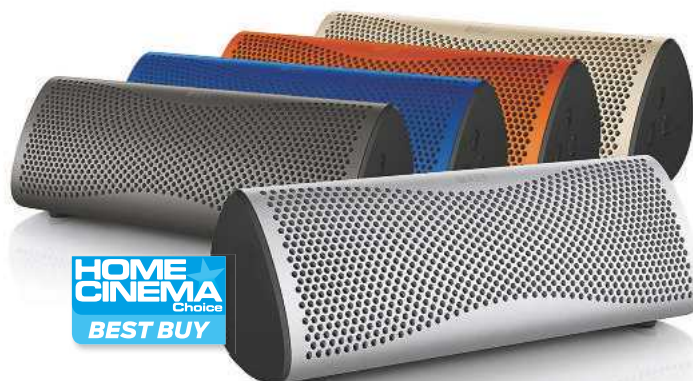
→ £400 → www.pioneer-audiovisual.eu

KEF Muo

Mark Craven can't afford KEF's flagship Muon speakers – this portable pastiche makes up for it

TO MAKE THIS Bluetooth speaker stand out in a crowded category, KEF has taken not only most of the name of its high-end Muon enclosures (£80,000 a pair, if you're interested) but a hint of the design ethos, too, with the grille mimicking Muon's curved form. Behind this sit a brace of miniaturized Uni-Q drivers, joined by a passive bass radiator. The cabinet itself uses an aluminium shell and feels both impressively solid and surprisingly hefty. It can stand vertically or rest horizontally.

Bluetooth pairing (aptX) is quick. NFC touch-connection is also offered, as is a 3.5mm jack. The Muo charges via microUSB; give it three hours and it should be good enough for a day's listening. Two can be paired either in stereo or party mode, but this isn't a multiroom proposition.



KEF's speaker makes its comparatively high price tag seem worthwhile, and highlights the limits of cheaper rivals with its superior performance. There's a fine balance across the frequency range, with purposeful, tight bass, full-bodied mids and highs that kiss your ears. With *Shine a Light* (The Rolling Stones), the Muo relishes the dynamic swells of Jagger

and Co's epic, and digs out crisp percussion and a punchy kick drum. Guns n Roses' *Sweet Child of Mine* has energy and drive. And these are just 256kbps rips; Slash's moody instrumental *Safari Inn*, as a 16-bit/44kHz ALAC file, sounds resplendent – all fluid funk riffs and wailing guitars. At the other end of the music spectrum, Adele's *Hello* is spine-tinglingly good, too, especially the way her up-front vocal breaks free from the confines of KEF's curved cabinet. And while its sound can't be described as 'room filling', the Muo has more than enough power and high-volume composure. Highly recommended ■

HCC VERDICT ★★★★★

KEF Muo
→ £250 → uk.kef.com

OVER-EAR HEADPHONES/£530

Audio Technica ATH-A2000Z

Ed Selley enjoys the spacious and detailed soundstage of these high-priced headphones

THE FLAGSHIP OF the revised range of 'ART Monitor' models, Audio Technica's ATH-A2000Z is a domestic set of cans with few concessions for use anywhere else. This means that you get a pair of sizeable 53mm drivers that make use of hand-wired voice coils, Permendur magnets and magnesium-coated baffles. These are then – somewhat unusually – placed in a sealed enclosure employing the company's proprietary 'Double Air Damping System', which allows the driver to vent into a separate sealed chamber rather than to the outside world.

Externally, the ATH-A2000Zs are big but well proportioned and very well finished. The outsides

Each earpad hides a 53mm driver



of the enclosures have a thin skin of titanium. It's a bit of a fingerprint trap but looks smart. Keeping them atop your skull is Audio Technica's '3D Wing Support', which uses two independently sprung pads rather than a conventional headband. I really like this method but others I have persuaded to don the 'phones have been less convinced.

The ATH-A2000Zs are as effective a performer as the price tag implies. For a closed-back design, they sound exceptionally spacious and unconstrained. With *Mad Max: Fury Road*, they manage to retain the sense of the vastness of the

Outback, while the ability to retrieve fine detail is extremely impressive.

Tonally, the sound is slightly smoothed off and there can be moments when you feel that you're losing the last little bit of bite and attack, but this makes it an easy pair to listen to for long periods. It also means that, used for music as well as film, the ATH-A2000Zs are a strong all-rounder. Whatever content you feed in is unlikely to wrong-foot them.

The only real negative against the Audio Technicas is that despite the closed-back design there's a considerable amount of noise leaked back into the room, which may annoy the rest of your family. Yet for isolated use, this is a desirable offering ■

HCC VERDICT ★★★★★

Audio Technica ATH-A2000Z
→ £530 → www.audio-technica.com



Just a few of our recent accolades



Best Home Cinema Over £100k **Highly Commended** 2013
 Best Home Cinema £40k-100k **Highly Commended** 2015
 Best Home Cinema under £40,000 **Winner** 2011, 2015



Best Home Cinema **Winner** 2014
 Most Professional AV Rack **Winner** 2014
 Dealer of the Year **Winner** 2014
 Best Lighting Project **Winner** 2015



Best Home Cinema **Winner** 2015
 Most Outstanding Entry Winner's **Winner** 2015



Home
Acoustics
Alliance
Certified



© Imaging
Science
Foundation
Certified



Home Cinema Excellence

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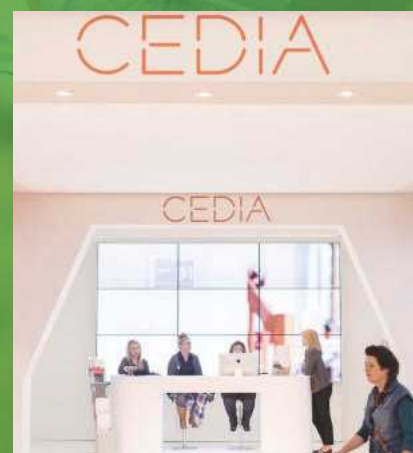
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Digital Copy

With seemingly every Ultra HD Blu-ray release arriving with HDR, **Mark Craven** wonders if this will slow down the release of classic titles, or simply reduce the choice available

IN OUR INTERVIEW last issue with film restoration expert James White, he said something that really got me thinking. In short, it was that every time we move from one home video format to another (DVD to Blu-ray for example) the quality improves but the number of available titles decreases. I'd never considered it that way before, but I'll concede he's probably right.

This brings me – inevitably – on to Ultra HD Blu-ray. The 4K format has enjoyed a successful 2016 launch, according to disc and hardware sales figures, and statements from invested parties. But will its second year feature an explosion of releases, including sought-after back-catalogue titles? Or can we expect the same model of contemporary flicks joined by the occasional archive release (*Labyrinth*, for instance) and do-overs of recent blockbusters (*Oblivion*, *Pacific Rim*, etc)?

Unfortunately, reader, I don't know. As much as I'd like to be privy to the business plans of Sony, Universal, Warner *et al*, these studios are keeping their cards close to their chests, and my attempts to shrink myself, Ant-Man-like, so I can squeeze through a keyhole at Sony's Culver City HQ, have only resulted in a nasty bout of radiation sickness. But if I had to bet, I wouldn't be doubling down on *Attack of the 50ft Woman* getting a UHD BD soon. *Close Encounters of the Third Kind*? Maybe.

To put it another way, 4K disc isn't a replacement for Blu-ray, but a premium companion, in the same way that Blu-ray hasn't overpowered DVD. I still own standard-def discs because no studio has yet bothered to unleash an HD version. And I will continue to buy Blu-rays because the 4K catalogue remains small.

So what might arrive in 2017? Well, as James White suggests, some of the 'crown jewels' of

Hollywood, particularly those titles already treated to 4K masters, will probably make a bow. *Lawrence of Arabia* is already available in Ultra HD via Sky Q, albeit without HDR. Sony Pictures is probably adding peak highlights to its desert suns as we speak.

The thing is: **do we want all our beloved favourites to be given HDR upgrades?**

Just because something can be done, should it?

Let's call it the Jabba The Hutt conundrum.

Personally, I preferred *A New Hope* without his ugly CG mug cluttering up the place.

Furthermore, the last time I watched *The Godfather* (in UHD on Sky, as it happens), I didn't immediately find myself wishing there was more image pop or dynamism. Francis Ford Coppola did a pretty good job lensing it first time around, as long as you're prepared to peer through all that film grain.

UHD Blu-ray making the grade

There have been instances of overt re-grades in the past, of course. James Cameron's *Aliens* (pictured) and William Friedkin's *The French Connection* (both on Blu-ray) spring to mind. But these are one-offs, completed with the explicit approval of their creators. They aren't the result of a junior studio engineer pressing the big 'HDR' button and nipping out for a Coke. Which, in my nightmares, is what I imagine might just be happening.

My colleague Steve May suggests elsewhere (p122) that there's appeal to be found in 4K simply from the resolution boost. The danger is that AV-Holics are left kicking their heels waiting for UHD BD releases of their favourite movies, while HDR passes are made that might not really add much to the films themselves ■

What classic titles are you desperate to see on UHD Blu-ray? Let us know: email letters@homecinemachoice.com

If **Mark Craven** really could shrink himself, the first thing he'd do would be slither under his sofa to find his still-missing Roku remote





In The Mix

Does the BD drive in your PC hide a 4K secret? And what about the one sitting in the PlayStation 4 Pro? **Jon Thompson** goes looking for answers and ends up with more questions

SONY'S SHOCK PS4 Pro announcement that it didn't support UHD Blu-rays is looking weirder by the minute. And not just because the suggestion that physical media is dead is ridiculous, when you analyse the uptake of 4K BDs compared to the early days of its Full HD predecessor. Why is UHD BD growing four times as fast as Blu-ray a decade ago if we are abandoning physical media for streaming? Answers on a postcard.

Anyway, it's looking weirder because it might be that it can actually play the damn discs in the first place. Sort of. Let me explain...

Pushing the storage envelope

One of the advantages of Blu-ray was its five times increase in storage capacity over DVD, which, for the likes of the PlayStation 3, was a huge advantage for the games being created. In computer terms, Blu-ray was developed as a long-term storage media, and its capacity expanded to 128GB with the BD-R 3.0 specification in 2010, dubbed BDXL.

Now, UHD Blu-rays are a combination of several elements – the disc format being only one of them – and it is based on the BDXL specification. So in theory, a BDXL drive should be able to play a UHD Blu-ray. Right? Wrong. As of writing this, there is no consumer-branded drive labelled UHD Blu-ray. So it looks like you can't play them on your computer or even just read a disc. But it's not as simple as that.

BDXL is BD-R 3.0 for read-only discs. The UHD Blu-ray format uses a revised version called BD-R 4.0 and for some reason, no one seems to have told the public. For about a year now drives from LG Electronics have supported BD-R 4.0, buried in the tech spec of the drive. The LG BH16NS40 second-generation BDXL drives support the reading of UHD Blu-ray movie discs but don't

advertise the fact. Along with the LG WH16NS40. And that's only half the story.

Next, you actually need something to play the movie and decrypt the AAC2.0 encrypted data. I am not endorsing the next bit as it's a bit hit-and-miss in terms of stability. So try at your peril.

Blu-ray player software made by a Chinese company called Leawo lets you play UHD Blu-ray discs on the above drives on your PC screen. It's free, so try it if you have a drive that can read a UHD BD. It requires a 'net connection to run, as it seems to be pulling AAC2.0 keys down from its host site. AAC2.0 has thankfully not been cracked yet, so it has to do it the old-fashioned way and have a real key to open disc playback. As you own the disc and its physical form you have the right to play it as long as you not trying to rip it.

Yet LG isn't the only one not advertising the fact that its drives support BD-R 4.0. Others are Pioneer, MediaTek and Sony. And Sony, it would appear, even has a license for putting such drives in its games consoles.

This opens up a mountain of questions. Is it a total lack of joined-up thinking by Sony that the PS4 Pro won't play UHD Blu-ray movies? The machine can read the discs, it just can't play them. **Is all that is needed is an update for UHD Blu-ray playback to be turned on?** Has Sony deliberately decided to not support UHD Blu-ray playback just in software? Could this be an interesting tactic to combat Microsoft's Xbox Scorpio console project that's due next year, with a rabbit-out-of-the-hat 4K BD upgrade? Or am I just overthinking this and being cynical? It's probably the latter... ■

*Do you use a PC in your home cinema setup?
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When he's not in his screening room, **Jon Thompson** tweets about Hollywood gossip, movie-making and digital mastering at [@johnnyfocal](https://twitter.com/johnnyfocal)





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4K HDR trumps 3D for AV fans

Having been a subscriber to *HCC* for several years now, I feel compelled to take your editor to task.

In *HCC* #267, Mark Craven lamented the absence of 3D on some new 4K displays [*Digital Copy*, p75]. Why? Surely the whole point of 4K is to eke out the best quality picture available at this moment in time. The usual accompaniment to 4K is HDR.

Now, the whole point of HDR is to give brighter, more detailed and realistic images, therefore, it goes without saying that 3D would undo all those benefits merely by having to put on tinted glasses.

If fellow home cinema enthusiasts were really serious then surely they will understand the absence of 3D.

Also, to say that 3D collectors are left with chunks of their library useless is misleading. All almost all 3D Blu-rays come with the 2D version as well, so now real enthusiasts have to decide which path they want to follow, 3D or 4K with HDR.

I expect that 3D is in decline anyway, and the forum which wrote the specs for 4K would seem to agree.



LG: a lover of 3D and 4K

I have not purchased any 4K equipment to date, but the fact that some displays don't offer 3D would not put me off. My over-riding priority is and always will be the best-quality picture and sound that I can afford. I would hope that fellow home cinema aficionados would feel the same. So until we have holographic displays, 3D

will never rival the quality, or sales of current 4K displays.

Steve Old

I'm adding to my 3D library

In response to Mark Craven's column in the last issue, no I haven't binned my 3D Blu-ray collection – I'm adding to it. On a passive

A question of power

Hi. If I were to get an 11-channel Dolby Atmos-enabled receiver and connect every channel up with speakers, would I need another amp to power any of the extra surround channels? Cheers. Tony Flesher, via Facebook

Richard Stevenson replies: An 11-channel AVR with Atmos will let you add four Atmos ceiling speakers/upfiring speakers in addition to the seven speakers in a regular 7.1 system. So if you have a 7.1 speaker array, and want the best Atmos experience, then an 11-channel model is what you're after. The AVR will power all those 11 channels without the need for an extra amp.

Extra power is needed with nine-channel AVRs that also offer 11-channel processing - eg, they can output 11-channel signals but can't amplify the last two. Hope that helps!



Anthem's MRX 1120 features eleven onboard amplifiers

65in display with a superb film like *Life of Pi* it's an awesome experience that I'm not willing to give up for the convenience of some manufacturers.

I'm looking to spend around £6,000 shortly on a new set to get HDR and 4K with a bigger screen if possible. 3D is essential, too, so that means Samsung and Philips are binned, not the 3D Blu-ray collection – sorry.

LG do seem to be a bit more in touch with their market than the competition!' *Chris Sedman, Manchester*

Mark Craven replies: Pleased to see different responses to my column; it shows in a nutshell how not all home cinema fans have the same wants and needs when it comes to new technology and formats.

Steve, I fully accept that 4K with HDR can be a mindblowing experience, and the tech helps us get ever nearer to images that mirror how we see the world in real life (depending, of course, on how they're graded – some HDR movies look a bit OTT to me). However, I don't agree that 'serious' enthusiasts will understand the absence of 3D – as fellow letter writer Chris highlights, what's needed is the option to watch both, on one display, and not have to have two separate screens depending on content. This was always meant to be the thrust of my column; I wasn't suggesting in any way that 3D is superior to 4K and HDR.

A final point is that while Hollywood is still making and releasing 3D films, it's good to have the option of viewing them in that format at home. HDR, of course, is a different beast altogether. Try finding a Dolby Vision cinema in the UK!

What happens next will be interesting. As Steve says, 3D is in decline (there are a less movies being released than before) and the UHD format is incompatible. More TV manufacturers may go the way of Philips and Samsung in removing it from their displays. We'll get more of an indication of this at CES in early January. You might want to buy that 4K/3D/HDR TV sooner rather than later, Chris.

I dug up a Video CD!

Martin Pipe's piece on VHS [*HCC #266*] whetted my appetite for reminiscences.

I can well remember my older brother buying a Ferguson Videostar and being amazed at its features; the picture quality was not entirely relevant at the time, because the fact that you could record one channel while watching another on the TV seemed fantastic. Sure, the quality was not brilliant, but the TV screens were nothing like as big as we have now, and the novelty made up for it.

I rented a VHS recorder from Granada ('Great service, great sets!') in 1979, by which time picture quality had improved although we knew nothing better.

★ Star Letter...

Atmos and 4K: should I upgrade?

Question? Is it now time to replace my 50in Pioneer Kuro plasma for a new 4K TV? Also my Anthem MRX 300 doesn't do Atmos heights. Is it time to retire that as well?

Phil Benn, via Facebook

Mark Craven replies: Two interesting questions, Phil! Let's start with the Pioneer plasma, to which my answer would be 'Yes.' Anyone serious enough about watching movies to invest in a Kuro plasma (hardly cheap, back in the day) is surely intrigued by the modern 4K and HDR formats, and the expansion of content that we've seen this year (Netflix, Amazon, Sky, UHD Blu-ray, games) gives me the confidence to say that 4K isn't going away.

Naturally, though, you want a TV that's capable of hitting the highs of your Kuro when it comes to picture performance, particularly in terms of black level and motion handling. It's here where you might find new screens a bit of a let-down.

The most obvious suggestion is to audition an OLED set. LG leads the way here, but Panasonic and Loewe are also on the market and Philips (plus potentially Sony) are joining the fray. OLED will definitely bring you the closest image quality experience to your plasma, thanks to its similar self-emitting nature.

That's not to say LED LCD should be discounted. It's with this technology where brightness boundaries are being pushed, leading to spectacular image quality from high-end displays from the likes of Sony and Samsung.

The good news is that whatever 4K model you go for, you'll also get some new features to enjoy, including in-built streaming/smart platforms, fancy touchpad remotes and 3D playback (depending on model). You'll also get a TV

with a much slimmer bezel.

The bad news is that the market for used Kuro plasmas isn't as hot as it once was.

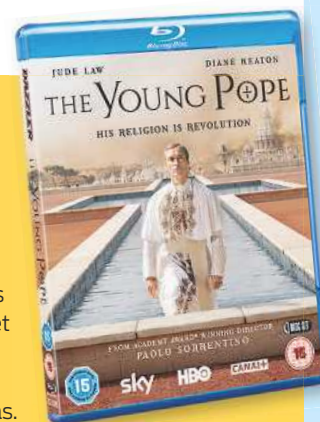
So maybe keep it for a second room if it's still working fine.

As for your MRX 300 receiver, this is a five-channel model with HDMI inputs that pre-date the 4K HDR era. If you want to use it with a new display, you might have to work around its inability to passthrough HDCP 2.2 and HDR content.

In terms of upgrading this for Atmos, that's a harder call to make. Certainly, you'll get a more immersive sound from an Atmos array, but you'll need at least two new speakers; adding four (either four heights, or two heights plus two backs) would be even better. This all starts to add up in terms of cost and there are installation factors to consider. Obviously, I don't know the specifics of your room layout!

Also, as you've been enjoying the sound quality of the MRX 300 for possibly four years, and making use of its skilful ARC room EQ system, be wary about upgrading to a feature-laden but more affordable Atmos AVR that might simply not sound as good. There's more to home cinema audio than just extra speakers, after all. Anthem's MRX 720 (Dolby Atmos, seven channels), however, costs over £3,000, a good chunk more than your MRX 300 did. Work out your max budget and shop around.

Star letter-writer Phil grabs *The Young Pope* on Blu-ray. One of the past year's most talked about TV dramas, *The Young Pope* was created by Italian director Paolo Sorrentino and stars Jude Law as rebellious young American Lenny Belardo, who has just been elected to the highest office in the Catholic church. The 10-episode series is available to own on Blu-ray, DVD and digital from December 26, courtesy of Dazzler Media.



The article missed out on another generation of digitised pre-recordings. That was Video CD. Having read the piece, I was moved to search out my only copy of a Video CD – *Four Weddings and a Funeral*. I bought this from Evesham Micros although I cannot remember how much it cost. I do remember it seemed expensive at the time.

Dropping the disc into my laptop, it ran okay. But the picture quality – resolution of 352 x 288 and an MPEG-1 bitrate of 1,150 kilobits per second – left a lot to be desired. Compare that with analogue VHS at 330 x 576 and the difference in quality is

understandable. Maybe good for viewing on a 'postage stamp' window, but not for showing on a big screen. However, the novelty of a video on a disc (or in the case of most feature films – two discs) was an interesting prelude to DVD.

As for attempting to record next week's episode of *Match of the Day*, when the VCRs have no digital tuners, it would be a risible procedure.

Richard Dalton-Moore, Leicestershire

Martin Pipe replies: Thanks for the letter Richard. Video CD? Now that's a blast from >

the not so distant past... Maybe another tech retrospective is in order.

I accept your point about analogue tuner VCRs, but remember that in the format's twilight years, there were models released with Freeview tuners too, such as Panasonic's DMR-EZ47V (also a DVD recorder/player). So one could still set 'a tape' for *Match of the Day*, although these days it's probably far easier to just stream it from iPlayer...

Waiting for a new high

When is the Philips Fidelio B8 Dolby Atmos soundbar going to be released? Are they having problems?

It was supposed to have been released Summer 2016 – now been and gone. Then October, also been and gone. Now when?

At least Amazon shouldn't have this all to itself this time – at least one major hi-fi chain has customer orders for this item. Suppose you will have no idea when your magazine will review it?

Mr R C Ingram

Mark Craven replies: There has been some delay between Philips first announcing the B8 and it appearing in stores. Not sure of the reason – obviously products are announced in advance, and then sales strategies with retailers have to be ironed out. However,

we had confirmation that the soundbar would be in stores 'early December.' It hadn't yet appeared by the time we went to press (listed as 'coming soon' with Richer Sounds), but it may well be there now.

And we'll be reviewing the B8 as soon as we can get our hands on one.

Voice control – not for me

I found Steve May's review of the Amazon Echo [HCC #267] was interesting. Personally, I don't think we'll ever get to a situation where home cinema setups can be completely 'voice-controlled'.

Surely there are too many complex

instructions (boost centre channel level, switch EQ mode, etc) for that to be done. Voice control will work fine for basic commands (play, pause, etc), but then so does the remote for my AV receiver!

My Samsung 4K TV also has a 'voice' feature, which is supposed to let you tell it to do searches through its smart apps, etc. I've tried using it only a few times and found it very hit and miss. Usually, a voice command is followed by an onscreen message saying that I need to rephrase the question. It's good for opening the Netflix app, but that's about it.

Philips' Fidelio B8: Atmos in a single bar...



And to do this on the physical handset only requires around three or four button presses.

We've been using remote controls with TVs, etc, for years. I can't see that changing any time soon.

Brian Pickering

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His Girl Friday

The Criterion Collection and Sony Pictures Home Entertainment are bringing the acclaimed Howard Hawks comedy to Blu-ray on January 16.

The Criterion Collection platter also includes a new 4K restoration of *The Front Page* plus loads of other extras, and we've got five to give away!

Question:

Which alliterative actress plays fast-talking reporter Hildy Johnson in *His Girl Friday*?

Answer:

- A) Rosalind Russell B) Greta Garbo
C) Marilyn Monroe

Email your answer with 'His Girl Friday' as the subject heading – and don't forget to include your postal address!



Mike and Dave Need Wedding Dates

Zac Efron and Adam Levine star as hard-partying brothers who advertise for 'respectable' dates to a wedding, only to get much more than they bargained

for. *Mike and Dave Need Wedding Dates* is out now on Digital HD, 4K, Blu-ray and DVD. Thanks to Twentieth Century Fox Home Entertainment we've got five BDs up for grabs!

Question:

Zac Efron starred in which of the following?

Answer:

- A) Dirty Grandpa B) Dirty Dancing
C) Dirty Harry

Email your answer with 'Mike and Dave' as the subject heading – and don't forget to include your postal address!



War Dogs

Based on a true story, *War Dogs* follows two friends during the first Iraq War who exploit a little-known government initiative that allows small businesses to bid on U.S. military

contracts. To celebrate the December 26 release of *War Dogs* on 4K, Blu-ray™ & DVD, we've got five Blu-rays™ to be won!

Question:

War Dogs star Jonah Hill voiced which DC superhero in *The LEGO Movie*?

Answer:

- A) Superman B) Green Lantern
C) Batman

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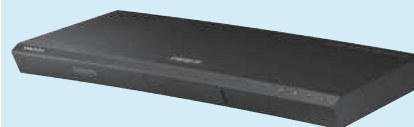
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PLAYBACK

→ **SOFTWARE HIGHLIGHTS** **BEN-HUR** Get ready for some hi-def chariot racing **FINDING DORY** Fishy sequel tugs at the heartstrings while dazzling the eyes **DONNIE DARKO** Cult classic gets a new 4K makeover **KUBO AND THE TWO STRINGS** Stop-motion stunner hits all the right notes **THE FORCE AWAKENS 3D** Stereoscopic *Star Wars* & MORE!

Going mad for it!

Suicide Squad: Extended Cut → All-region BD → Warner Bros.



With its superheroes coming a little unstuck on the bigscreen, DC Comics shifts its focus to the bad guys with this action blockbuster. Masterplan or disasterplan? Find out on p102

HCC RATINGS KEY...

| | |
|---------------|-------|
| Outstanding | ★★★★★ |
| Above average | ★★★★☆ |
| Acceptable | ★★★☆☆ |
| Disappointing | ★★☆☆☆ |
| Dire | ★☆☆☆☆ |

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Racing chariot for sale: four-horsepower engine and only one careful owner...



The definition of an epic fail

Hollywood's latest stab at this Biblical blockbuster should have been called Chariots of Misfire...



→ BEN-HUR

Betrayed by his adopted Roman brother Messala (Toby Kebbell) Jewish nobleman Judah Ben-Hur (Jack Huston) is arrested for sheltering a young Zealot and is sentenced to enslavement aboard a Roman galley. After five long years of slavery, Ben-Hur is able to make his escape when his galley is sunk during a naval battle. And with the aid of Sheik Ilderim (Morgan Freeman), he heads back to Jerusalem where he plans on getting his revenge on Messala by beating him in a chariot race.

There can be few books that have enjoyed as long and enduring a relationship with filmmakers as Lew Wallace's *Ben-Hur: A Tale of the Christ*. First published in 1880, the novel's initial flirtation with the silver screen came with an unauthorised 1907 one-reel silent adaptation. In 1925 Hollywood heavyweight MGM got in on the act with a feature-length flick (also silent). It then went back to the book in 1959 for William Wyler's legendary feature film starring Charlton Heston. Since then there's also been an animated version (again involving Heston) and a TV miniseries. So what can this latest adaptation add?

Quite simply, not much. Rather than returning to Wallace's book, this feels like little more than a remake of the 1959 film. However, while that version is a genuine delight, this retread

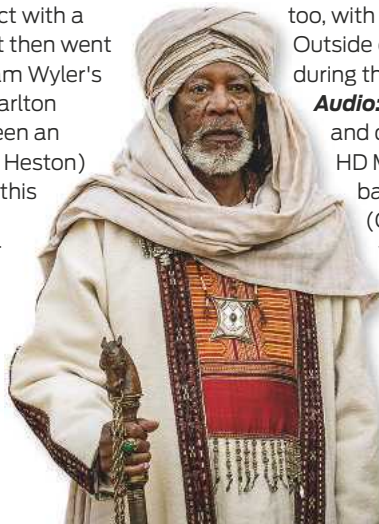
comes across as some sort of cheap knock-off, despite costing \$100million to put together. Everything feels somehow smaller, due to the reduced running time (a modest 123 minutes) and the corresponding decision to hack away large parts of the original story.

The only part that really succeeds is the chariot race. Here director Timur (Wanted) Bekmambetov finally cuts loose and delivers action spectacle that lives up to expectations. But it ultimately comes too late to make this otherwise ponderous and pious blockbuster worth sitting through.

Picture: This Blu-ray's 2.40:1 Full HD encode is a text-book example of what to expect from a modern Hollywood film on the format. Imagery is routinely bright and colourful, and unleashes a swathe of fine detailing, be it in flicked-up grains of sand or the textures of period costumes. It's well-contrasted, too, with excellent black levels at all times. Outside of a handful of GoPro-style shots during the chariot race, it's flawless.

Audio: Bass response, separation, steering and dynamics are all first rate in the DTS-HD MA 7.1 track, with the Ionian sea battle (Chapter 8) and the chariot race (Chapters 13/14) delivering demo-worthy examples of sound design.

Extras: Nothing too exciting, just seven deleted/extended scenes and five featurettes covering topics such as the cast, the chariot race and the film's spiritual message.



HCC VERDICT

Ben-Hur

→ Paramount/Universal Pictures
→ All-region BD → £25

WE SAY: It may look and sound the business, but you'd be better off sticking with the 1959 version.

Movie: ★★☆☆☆

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★☆☆☆

OVERALL: ★★☆☆☆

The Purge 3: Election Year

Universal Pictures → All-region BD
£20



It's hard not to watch this third instalment in the brutal franchise and wonder if it isn't about time somebody purged

The Purge. Despite the added political commentary, *The Purge 3...* is a pretty limp piece of satire, repeatedly pushing it into the background in order to revel in the sort of violence that the story itself seeks to condemn. This Blu-ray outing hits the target with crisp 2.40:1-framed 1080p visuals and dynamic DTS-HD MA 5.1 sonics, but falls rather short when it comes to worthwhile extras (the *Making of...* only clocks in at only six minutes).



The Beatles: Eight Days a Week – 2 Disc Special Edition

StudioCanal → Region B BD
£28



While it can't compete with 1995's *The Beatles Anthology*, this new documentary from Ron Howard does a fine job

of recapturing the energy of the Fab Four at their charismatic best through its nostalgic interviews and restored concert footage. Naturally, the quality of the Blu-ray's 1.78:1 1080p video is dependent on the variety of archival source material, but the cleaned up, remixed DTS-HD MA 5.1 always packs a punch. The exclusive bonus disc offers additional interviews and featurettes.



Pete's Dragon

Walt Disney → All-region BD
£25



Unlike its fairly slavish remakes of *Cinderella* and *The Jungle Book*, the more obscure nature of 1977's *Pete's Dragon* has allowed Disney (and co-writer/director David Lowery) to tell

an all-new story about an orphaned boy (Oakes Fegley) and his tame dragon. The result is a vast improvement on the original, marrying its oodles of charm to a far tighter story. It's also a lovely-looking film and this platter's lush 2.40:1 encode makes the most of the real-world locations (although the DTS-HD MA 7.1 audio is front-heavy). A lively chat-track by the film's director and two young stars is the pick of the disc's bonus bits.



Sequel finds a reason to exist

There's nothing fishy about Pixar's decision to craft a follow-up to *Finding Nemo*

→ FINDING DORY

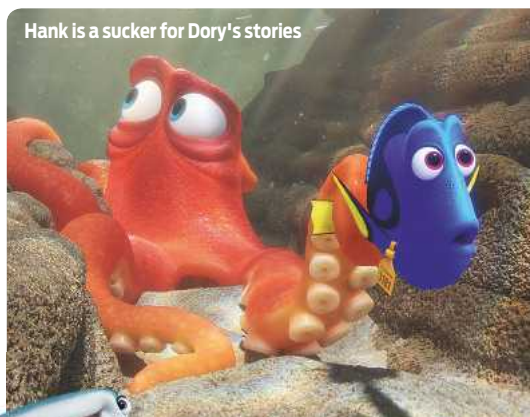
Pixar's 2003 smash *Finding Nemo* ranks up there with the very finest of the studio's creations. As such this long-gestating sequel has a heck of a lot to live up to – and despite a lingering sense of *déjà vu* it actually pulls it off.

As the title indicates, this time around the focus shifts over to amnesiac regal blue tang Dory (Ellen DeGeneres) who experiences a rare flashback to her childhood and goes off looking for her long-lost parents. Dory's journey leads her to the Californian Marine Life Institute where she befriends cranky seven-legged octopus Hank (Ed O'Neill); near-sighted whale shark Destiny (Kaitlin Olson); and echolocation-impaired beluga whale Bailey (Ty Burrell). Meanwhile, out in the Pacific, Dory's new clownfish 'family' of Marlin (Albert Brooks) and Nemo (Hayden Rolence) will stop at nothing to bust her out.

While the basic story repeats the core concept of *Finding Nemo*, this sequel uses it as a way to explore pretty weighty issues surrounding mental and physical disabilities. That the film does this with such a deft touch that it doesn't overplay the sentimentality (too much), while simultaneously making us chuckle with a broad streak of visual humour, is testament to Pixar's storytelling prowess – and the studio's willingness to let its filmmakers write sequels that justify their existence rather than simply acting as franchise-extending cash cows.



Hank is a sucker for Dory's stories



Picture: *Finding Dory* doesn't quite match the unrivalled beauty of *Finding Nemo*, but this sequel's AVC 1.78:1-framed 1080p encode still makes a splash. Colours stand out in particular, and there's so much pixel info in the image that you could swear you were

watching a 4K platter instead.

Audio: The film's DTS-HD MA 7.1 mix is an immersive affair that rarely shouts out loud, although that's not to say its dynamically defunct. There's seamless panning between channels, dialogue is crystal-clear, and the score sounds wonderfully rich.

Extras: Disney's UK 2D platter serves a smattering of quality extras including a filmmakers' commentary, five *Making of...* videos and the delightful animated short *Piper*. The US Blu-ray also included a second disc of extras, but for some reason Disney has made that exclusive to the 3D release over here.



HCC VERDICT

Finding Dory

→ Walt Disney → All-region BD
→ £25

WE SAY: If you aren't bothered about the missing bonus disc, then this is another Blu-ray triumph for Pixar.

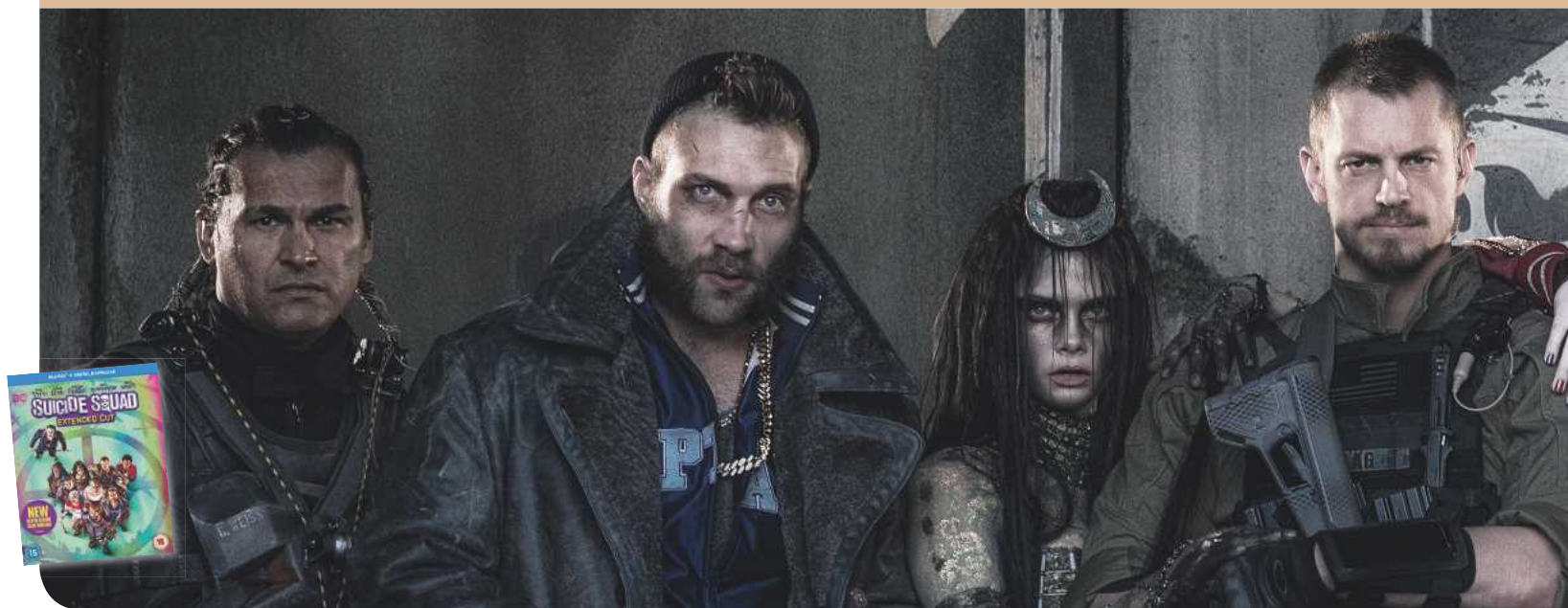
Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



Naughty but nice

The bad guys (and gals) of the DC Comics' universe succeed where superheroes like Batman and Superman have struggled...

→ **SUICIDE SQUAD: EXTENDED CUT**

Concerned by the emergence of super-powered beings like Superman and the threat they may pose to the US, government agent Amanda Waller (Viola Davis) cooks up Task Force X. This off-the-books special ops team is made up primarily of expendable 'metahuman' felons who have been 'persuaded' to do as they're told – thank to explosives implanted in their necks.

Put under the command of military operative Rick Flag (Joel Kinnaman) the team consists of sharpshooting assassin Deadshot (Will Smith); The Joker's girlfriend, Harley Quinn (Margot Robbie); ancient witch the Enchantress (Cara Delevingne); Australian thief Captain Boomerang (Jai Courtney); pyrokinetic gangbanger Diablo (Jay Hernandez); reptilian mutant Killer Croc (Adewale Akinnuoye-Agbaje); swordswoman Katana (Karen Fukuhara); and escapist Slipknot (Adam Beach).

When the Enchantress escapes her bonds and goes rogue, Task Force X is sent in to put an end to her world-ending plans. Of course, that would require the squad members to stop plotting their escape and learn to function as a team. And then there's another wildcard to deal with, The Joker (Jared Leto), who really wants to get his lady back.

Following hot on the heels of Zack Snyder's *Batman v Superman: Dawn of Justice*, David Ayer's *Suicide Squad* sees DC Comics/Warner Bros. still rushing to cobble together its own interconnected cinematic superhero universe to challenge Marvel. Thankfully, unlike Snyder's grim superhero slugfest, *Suicide Squad*'s cast of grotesques and anti-heroes ensures that the film doesn't take itself too seriously. Instead, there's a whiff of *Deadpool* about its punk attitude and unpredictable characters.

That's not to say that *Suicide Squad* is as good a film as the *X-Men* spin-off. In fact, it's a bit of a mess. From the episodic opening act that introduces each of the



THE LOWDOWN...

DC Comics' cinematic world-building continues next June with *Wonder Woman*, which tells the story of the Amazonian warrior (Gal Gadot) and her first contact with mankind during World War I.

The franchise expands even further next November, when *Batman v Superman...* helmer Zack Snyder brings together Batman, Superman, Wonder

Where next for the DC Extended Universe?

Woman, The Flash, Cyborg and Aquaman for *Justice League*.

Justice League members Batman (Ben Affleck) and Aquaman (Jason Momoa) are then set to get their own solo films in 2018. A standalone outing for The Flash (Ezra Miller) may be delayed due to the recent loss of yet another director from the film.

Also confirmed are *Shazam* (with The Rock playing bad guy

Black Adam) and a *Justice League* sequel for 2019, with *Cyborg* and *Green Lantern Corps* following in 2020.

And after her star turn in *Suicide Squad*, it should come as no surprise that a Harley Quinn spin-off movie has been fast-tracked. Rumours abound that it will also feature the Birds of Prey (Huntress, Black Canary and Oracle). Whew!



Your typical Gotham City police line-up

characters (with added Batman and Flash cameos), through its over-extended cast where some characters get lost in the mix, and up to its anticlimactic finale, it's a film that certainly could do with tightening up.

However, messy doesn't necessarily mean bad. Ignore the critical lambasting it received on its cinema release, as *Suicide Squad* is DC's best film to date. And more than that, it's genuinely fun.

Most of that is down to the cast. Smith is as smooth and charming as ever as Deadshot, while

Robbie steals the film with her excellent comic timing. Elsewhere, Viola Davis succeeds in making Amanda Waller a menacing government puppet-master, while Jared Leto's gonzo gangsta take on The Joker moves the character out from under the shadow of Heath Ledger's anarchist and turns him into a full-on psychopath.

It's just a shame that nobody could come up with anything better for them to do than fight hordes of Identikit black, bobby mutants that appear to have stepped out of a second-rate videogame. And the less said about the 'big bad' and its swirly CGI pillar of pixels (the umpteenth

time this sort of ill-defined digital McGuffin has served as the focus for the finale of a modern Hollywood blockbuster), the better.

Still, we can't wait to spend more time with this roll-call of rogues in future sequels or spin-offs.

Picture: Unlike the rather homogeneous aesthetic preferred by the Marvel movies, the DCEU prefers a more stylised visual palette (no matter what this disc's extras may say about 'chasing reality').

Like its predecessors, *Suicide Squad* is a dark film, but it's one that is peppered by occasional splashes of vivid neon colours. Together with the excellent contrast levels (which ensures that intricate details are easily discerned amongst all the gloom) this give the 1080p image a palpable sense of depth and scale. All in all, it's a terrific Blu-ray presentation.

Audio: *Suicide Squad* hits Blu-ray with a Dolby Atmos soundtrack (with Dolby TrueHD 7.1 core). This packs broad dynamic range and deep LFE; all of the big action sequences are backed up with the necessary aural punch. Surround channels get plenty of use during these sequences, too, with bullets, etc, spraying all around you.

While Atmos height info can get a little lost in the chaos of the more anarchic action scenes, it does prove very effective with atmospheric effects. A sequence with Rick Flag and the Enchantress in the subway (Chapter 5), really does sound like you are all directly below the mayhem taking place overhead.

Meanwhile, the presentation of the film's music and dialogue is exemplary.

Extras: This two-disc Blu-ray release includes both the Theatrical Version and an Extended Cut. The latter adds around 10 minutes of extra footage, but isn't an essential watch, bringing little substantial to the mix except for a silly scene involved Harley, Joker and a motorbike. There's definitely no sign of the well-publicised alternate Mr. J footage from the film's original finale...

Repeated across both discs are the same extras. These take the form of six fairly meaty *Making of...* featurettes (covering the history of the *Suicide Squad*, evoking 'reality', Joker and Harley Quinn, fight training, weapon design and creating the three big action set-pieces), plus a character guide and a gag reel.



If only the film's villain was as interesting as its anarchic (anti-)heroes



The 'Clown Prince of Crime' strikes!

HCC VERDICT

Suicide Squad: Extended Cut

→ Warner Bros. → All-region BD
→ £25

WE SAY: Spectacular 1080p visuals and immersive Atmos audio help this irreverent comic book flick standout on Blu-ray.

Movie: ★★★★★

Picture: ★★★★★

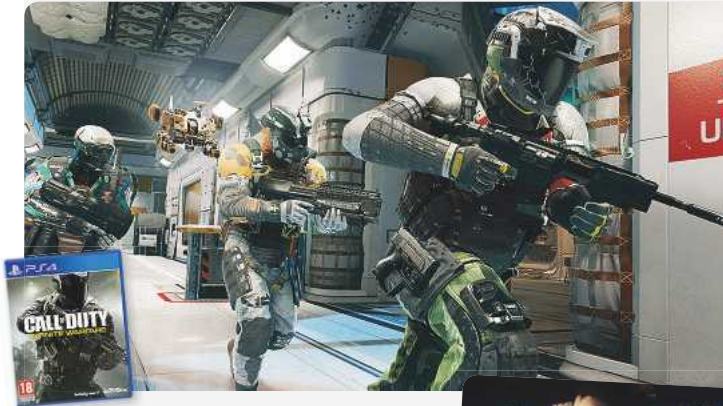
Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Arcade Action

Bigscreen home entertainment isn't just about movies anymore. **Rik Henderson** checks out a videogame vying for time on your home cinema system...



Call of Duty: Infinite Warfare

Activision → PlayStation 4, Xbox One, Windows PC → £50

It could be argued that *Call of Duty* has been in decline ever since it started to embrace sci-fi plots and gimmicks. Applying superhuman abilities to its soldiers seemed at odds with the series highlights of early World War II sorties and the up-to-the-minute *Modern Warfare*.

Curious then that *Call of Duty: Infinite Warfare* – with its even more outlandish sci-fi tropes – is easily one of the best outings in years. But it is. And we love it.

The single-player campaign is a blast; shorter than some, perhaps, but jam-packed with all-out action. As Captain Reyes, you travel the solar system taking on a thinly disguised Russian threat, with a great cast of extras, and facing huge space and ground battles around and on a number of recognisable planets.

The former of those will no doubt deter some *CoD* stalwarts as it owes more to space flight and fight games, such as *EVE* or *Wing Commander*, but we like the balance. And the ground assaults are enhanced by the feeling of tangible, real-world weapons rather than laser pistols. There are some enhanced demolitions and gadgetry, too, but they all feel grounded.

It is also spectacular, with excellent acting work by a cast including Kit Harrington (*Game of Thrones*) and David Harewood (*Homeland*). They provide the cinematic overtones the series is renowned for and ensure you're engaged from beginning to end.

A lot of thought this year has also gone to the multiplayer mode. Even in its poorest years, *CoD* has always excelled online, but we've enjoyed *...Infinite Warfare* more than most. Yes, we still get shot in the face constantly, by much more capable foes, but the maps and weapon structure makes even that feel fun.

You also get a co-op addition, *Zombies in Spaceland*, starring David Hasselhoff, Paul 'Pee Wee Herman' Reubens and Seth Green (of *Austin Powers* fame), thrown in for good measure.

Call of Duty: Infinite Warfare is one of the first games to add 4K HDR enhancements for owners of PS4 Pro consoles. And it is the latter of those two technologies that's most obvious in its impact, with massive explosions in the cold depth of space benefitting from a contrast and brightness bump. That said, it looks gorgeous in its standard presentation, too. We'd also recommend you crank up your speaker system as the surround effects are spectacular.



30th Anniversary Limited Edition

The Transformers: The Movie

Manga Entertainment → Region B BD
£28



Although it may have been little more than an extended advert for a new range of toys, there's still more heart and storytelling know-how in this 30-year-old cartoon than in any of Michael Bay's live-action *Transformers* films. This steelbook serves up 1.85:1 and 1.37:1 presentations of the film (on separate platters) based on a meticulous new 4K restoration, with a choice of DTS-HD MA 5.1 and stereo audio for both. Enjoyable extras – including a chat-track, 45-min documentary and a look at the restoration process – are repeated across both discs.



Fear the Walking Dead: Season Two

EntertainmentOne → Region B BD
£45



Having stumbled through its six-episode opening season, this *Walking Dead* spin-off returns with an expanded 15-part sophomore year. Sadly, while the number of episodes has increased, the quality of the scriptwriting hasn't and the show remains every bit as frustrating as ever in its (mis)handling of characters we're expected to care about. At least the move to Mexico brings a slightly more dynamic visual appearance to the series, which in turn leads to a more appealing 1.78:1 Full HD Blu-ray presentation. Bonuses are limited to brief *Making of...* vignettes for 14 episodes and the *Flight 462* tie-in web series.



The Driller Killer

Arrow Video → All-region BD & RO DVD → £20



The lurid title and cover art secured it a place on the Video Nasties list, but Abel Ferrara's divisive 1979 feature about a struggling New York artist who takes a power drill to the city's homeless population is more art house black comedy than straight-up slasher. A new 4K restoration of the original 16mm negatives pays dividends, and this stacked Blu-ray serves up two cuts of the film each in a choice of 1.37:1 and 1.85:1 aspect ratios. Excellent extras include a new commentary and interview with Ferrara, plus his fascinating 2010 documentary *Mulberry St.*



Watch out Pixar, stop-motion specialist Laika has you firmly in its sights



Lyrical animation wows in HD

Laika's latest stop-motion masterpiece takes viewers on a magical journey of Blu-ray delights

→ KUBO AND THE TWO STRINGS

One-eyed boy Kubo (Art Parkinson) lives in a cave atop a mountain in ancient Japan with his sick mother Sariatu (Charlize Theron). Kubo spends his days entertaining nearby villagers with tales of the samurai Hanzo, which he brings to life via origami that's magically animated by music played on his guitar-like shamisen.

Sariatu insists that Kubo always returns to the cave before nightfall lest his grandfather, the Moon King, comes to take his remaining eye. Which is all fine and well until Kubo absentmindedly stays out late during a local festival and is immediately attacked by two seriously creepy witch sisters (both voiced by Rooney Mara).

When his mother comes to his aid and uses the last of her magic to send him far away, Kubo gains two unlikely protectors – Monkey and Beetle – and embarks out on a quest to find his deceased father's sword and armour, which hold the power needed to defeat the Moon King once and for all...

With *Kubo and the Two Strings*, stop-motion specialist Laika cements its position as the most exciting animation studio in the US right now. While its previous three releases – 2009's *Coraline*, 2012's *ParaNorman* and 2014's *The Boxtrolls* – established its ability to craft a compelling story, this latest effort takes things to a new level.

Coming pretty close to perfection, *Kubo and the Two Strings* grips from the beginning with its remarkable visuals, before taking viewers on a

fantastic journey of discovery. In doing so, it plays with the full range of emotions – from excitement to fear, humour to affection – with just as much skill as Kubo plays his magical instrument. This is a visionary piece of cinema constructed with an unparalleled level of craftsmanship. Highly recommended.

Picture: The Blu-ray's polished 1080p encode is nothing less than magnificent. Clarity and detail levels in the 2.40:1 imagery highlight the physicality of the character models and sets; each shot reveals a wealth of finely-etched textures and fabrics that gives even this 'flat' presentation a real sense of volume (a 3D Blu-ray is also an option, but wasn't made available for review).

Audio: Despite being mixed in Dolby Atmos for its cinema release, *Kubo and the Two Strings* lands on Blu-ray with a DTS-HD MA 5.1 track. While this is disappointing and rather surprising as Universal regularly features Atmos/DTS:X mixes on its new BDs, the track we do get is still a good 'un. The entire soundstage is employed continually to immerse you within the film's world, dialogue is pleasingly clear and there's sumptuous musicality to Kubo's playing. Overall, it's a lovely piece of sound design that truly enriches the viewing experience.

Extras: Director Travis Knight provides an informative commentary for the film, while more behind-the-scenes secrets are unearthed in the six-part *Kubo's Journey* (fascinating stuff, but its half-hour running time is far too short). Rounding things off are a pair of additional three-minute EPK-style promo videos. A film this good deserves a bit more.



An 18-foot stop-motion puppet was built for the giant skeleton scene



HCC VERDICT

Kubo and the Two Strings

→ Universal Pictures → All-region BD
→ £25

WE SAY: A stunning hi-def debut for Laika's dazzling stop-motion animation. Simply unmissable.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



Re-awaken your love for 3D

Stereoscopic reissue adds an extra dimension and more extras to the sci-fi smash

→ STAR WARS: THE FORCE AWAKENS 3D – COLLECTOR'S EDITION

As we made clear in our review of the initial Blu-ray release back in HCC #260, we have a lot of time for J.J. Abrams' long-awaited *Star Wars* sequel. The frequent re-treading of setups from the Original Trilogy is a little tiresome, but *The Force Awakens* feels like a natural progression from where Lucas left things, introducing a well-drawn array of new characters (alongside plenty of old favourites) and representing a massive step-up in quality from those pesky prequels.

Picture: As those who picked up the film's previous Blu-ray or have checked out this month's Movie Awards (p25) will already know, *The Force Awakens* delivers a flawless 'flat' Blu-ray viewing experience bursting with saturated colours and rich textures. But what about this new 3D incarnation?

Presented on a disc of its own, the MVC 2.40:1 1080p stereoscopic encode is equally impressive. While low on negative parallax effects that appear to exceed the boundary of the screen (the film was lensed in 2D and converted in post), the sense of depth is tangible; the interior of the crashed Star Destroyer (Chapter 7) appears to stretch away to infinity. Volumetric effects are also convincing, with everything in shot maintaining a lifelike three-dimensional presence.

Although brightness and colour take a small dip, the overall impact is eye-catching. Indeed, our only real quibble is the decision not to include the 3D IMAX sequences in their full aspect ratio.



Audio: Both 2D and 3D versions feature the same DTS-HD Master Audio 7.1 soundtrack that appeared on the original Blu-ray, and it's still prime demo fodder thanks to its excellent imaging, superlative dynamic range and layered effects. Play it loud and proud. Those waiting for a Dolby Atmos remix are still waiting.

Extras: On top of the 3D version of the movie, this three-disc 'Collector's Edition' Blu-ray tops up the original array of bonus features (all of which are included here) with some all-new goodies.

Best of the bunch is undoubtedly J.J. Abrams' director's commentary, which provides an in-depth account of the decision-making behind much of the film's production. Backing this up are three new deleted scenes (taking the total to nine); four additional *Making of...* featurettes exploring Foley effects, sound design, costumes and weapons; and a chat with stars Daisy Ridley and John Boyega.

DISC
OF THE
MONTH



HCC VERDICT

Star Wars: The Force Awakens 3D – Collector's Edition

→ Walt Disney → All-region BD
→ £30

WE SAY: The year's best Blu-ray blockbuster just got even better. The Force is stronger than ever.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Kickboxer: Vengeance

Kaleidoscope → All-region BD
£15



The student becomes the teacher in this reboot of the popular 1980s action franchise, which finds Jean-Claude

Van Damme promoted to the role of mentor. Fun though it may be, *Kickboxer: Vengeance* is ultimately hampered by some key issues, including obvious post-production tinkering and wasting MMA brawler Gina Carano in a non-fighting role. Shot primarily using RED cameras, the film hits Blu-ray with a crisp 2.40:1 Full HD encode, while the DTS-HD MA 5.1 track brings plenty of impact to the fight scenes. The trailer and a seven-minute *Making of...* are the disc's only extras.



Mike and Dave Need Wedding Dates

Twentieth Century Fox → All-region BD
£25

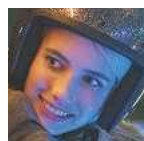


This broad, vulgar, yet relentlessly amusing comedy stars Zac Efron and Adam Levine as idiotic brothers who put out an ad for 'respectable' dates to their sister's Hawaiian wedding. Trouble is, the girls they end up choosing (Audrey Plaza and Anna Kendrick) are actually uncontrollable party-monsters. Filmed on location in Hawaii, *Mike and Dave...* delivers a vibrant 2.40:1 1080p image on BD, while the DTS-HD MA 7.1 soundtrack makes surprisingly effective use of the surrounds. Deleted scenes and outtakes are the bulk of the extras.



Nerve

Lionsgate → Region B BD
£20



While it falls apart a bit towards the end, *Nerve* is an enjoyably wild and memorable teen thriller about an online game that lets players win money by completing more and more outrageous – not to mention dangerous – dares. One of the most vibrant and stylish films we've seen all year, *Nerve* looks tailor-made for 4K HDR enjoyment. But as that's not on the cards right now, the good news is that this 1080p disc's 2.40:1 video still captures the neon palette perfectly, while DTS:X audio is thrillingly immersive. Extras are plentiful (if individually brief), but the menus are a pain to navigate.



Mechanic: Resurrection

Lionsgate → Region B Blu-ray
£25



While more Statham is always a good thing, 2011's *The Mechanic* was hardly one of his best efforts and this sequel is simply a generic action flick, albeit with an added level of swimsuit Jessica Alba not seen since 2005's *Into the Blue*. Outside of Statham's charisma, the film's real saving grace is second unit director Vic Armstrong who brings plenty of energy and creativity to the various action sequences. This Blu-ray release features fine 1080p visuals and Dolby Atmos audio. Five short featurettes are also included.



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delight. Red sky at sea, get
in your boat and flee...



Alien invaders return in 4K

Master of disaster Roland Emmerich gets ready to destroy some more famous landmarks...

→ INDEPENDENCE DAY: RESURGENCE

We're suckers for a good 'hell yeah' Hollywood blockbuster. *Armageddon*? Awesome. *Con Air*? Genius. The original *Independence Day*? Love it, cheese and all. Sadly, though, it's hard to find any love for *Independence Day*'s belated sequel.

Not only does *Resurgence* underuse original characters and underdevelop new ones, it races towards its mental finale at an unseemly, untidy pace that seemingly serves no other purpose than to disguise the lack of decent dialogue or story. In other words, it's bombastic in all the wrong ways. Worst of all, it's so relentlessly and monumentally stupid that it makes *Armageddon* look like a Ken Loach film.

Picture: *Resurgence* was shot using a mix of 6K and 4K, and mastered to a native 4K digital intermediate, so you'd expect the Ultra HD disc to look awesome. Unfortunately, it doesn't.

For starters it takes a very muted approach to HDR. Sure, there's more subtlety in colour tones and more nuancing of bright highlights, and this extra colour refinement helps create a greater sense of depth and a generally more 'solid' appearance. However, far from popping off the screen like fan-favourite UHD Blu-rays do, the image here actually looks less bright and vibrant than the 1080p Blu-ray. There's an odd yellow tone to some exteriors, too.

The 4K encode also fails to shine with detailing. There's a marginal improvement, especially with large-scale shots, but it's hardly night and day.



HCC VERDICT

Independence Day: Resurgence

→ Twentieth Century Fox
→ Ultra HD BD → £30

WE SAY: A disappointing 4K outing for this feeble sci-fi sequel. It does sound rather wonderful, however.

Movie: ★★☆☆☆

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

It's not all bad. Black levels are richer on the UHD platter, the special effects look convincing even at 4K, and there's a more controlled feel to bright scenes. A surprisingly grainy finish looks less distracting on the UHD BD too. Overall, though, this is not the emphatic demonstration of UHD BD's capabilities you might have hoped for.

Audio: The UHD disc scores a clear win over the 'normal' Blu-ray courtesy of a Dolby Atmos mix. This delivers furniture-cracking bass whenever the alien mothership is in shot, as well as producing more powerful and refined effects steering during the action-packed air battles.

The biggest and most effective Atmos benefit, though, is the extra scale created by adding height channels. The height layer isn't used as aggressively as you might imagine when it comes to making effects whizz over your head, but it does create a convincing bubble of sound that tries as hard to keep you locked in with the action as the lazy insanity of the story tries to force you out.

Not detailed or imaginative enough to be a classic, but the Atmos mix's unadulterated loudness is still pretty heroic in a big, dumb kind of way.

Extras: The only extra found on the UHD Blu-ray is a rather dull commentary by director Roland Emmerich. The accompanying Blu-ray carries a solid selection of goodies, including a handful of deleted scenes with commentary; a mock documentary charting the 20 years that have passed in the fictional universe since the first film; a passable four-part *Making of...*; and an unfunny gag reel.

The Royal Tenenbaums

Criterion Collection → Region B BD
£25



Wes Anderson's most popular film receives fittingly royal treatment as part of the Criterion Collection Blu-ray

line-up. Supervised by the director, the new 2K transfer captures the colour palette perfectly (particularly with regards to the distinctive yellow tint) and serves up masses of detail. The DTS-HD MA 5.1 mix may not be hugely dynamic, but there's still a fine sense of scale to the audio and dialogue is handled with clarity at all times. Extras include a director's commentary, archival interviews and extensive photo/art galleries.



U.S.S. Indianapolis: Men of Courage

Lionsgate → Region B BD
£25



The idea of doing a film about the sinking of the U.S.S. Indianapolis has been floating around ever since Quint made

that iconic speech in *Jaws*. Sadly, this effort does it no justice with its unfocused storytelling and bargain basement VFX. Even Nic Cage, usually the deranged bright spot in even the worst direct-to-DVD dreck, is oddly subdued here. Clocking in at 130 turgid minutes it's about 32 times the length of Quint's speech and at least that many times less satisfying. If there's a positive to be found, it's that this BD's AV credentials are very hard to fault.



Elstree 1976

Soda Pictures → R2 DVD
£15



It was never likely to unearth any tantalising new tidbits about the making of *Star Wars*, but this affectionate

documentary about 10 supporting/character actors and extras who appeared in George Lucas' sci-fi behemoth provides a wistful look at life as a D-list celeb. Consisting almost entirely of talking head interviews (with a few recreations of life on-set thrown in for good measure) *Elstree 1976* doesn't ask too much of its anamorphic 1.78:1 transfer and DD5.1 audio, but both hold up well regardless. Extras include a chat-track and extended interviews.



Poldark: Complete Series Two

ITV Studios → Region B BD
£28



The BBC's sweeping period drama returns with 10 more episodes of love, loss, scheming, brooding and tracking

shots of Cornish cliff tops. Rollicking Sunday evening fodder that looks utterly gorgeous and offers up plenty of ridiculously addictive 18th Century soap operatics. This three-disc Blu-ray release delivers appealing 1080i50 encodes, although the LPCM 2.0 audio is rather less exciting. Extra goodies include a lively cast commentary for the final episode, plus deleted scenes and a selection of behind-the-scenes videos.



Into the rabbit hole again...

Will a new 4K restoration make Richard Kelly's mind-bending story any clearer?

→ DONNIE DARKO: LIMITED EDITION

Not since *The Rocky Horror Picture Show* can we remember coming across a film as polarising as writer-director Richard Kelly's 2001 debut. A fever dream comprised of teen drama, time paradoxes, superheroes, '80s nostalgia, predestination and a man-sized rabbit, *Donnie Darko* offers no critical middle-ground; you either embrace its dreamlike structure and apocalyptic philosophising or you don't. In which case you'll end up observing it all in a state of utter bemusement.

The key difference stems from how you approach the film. Treat it like a puzzle to be solved and you'll merely become frustrated by plot-holes and lapses in logic. But if you stop trying to make sense of it all (just look at the mess Kelly himself gets into with his over-explanatory 'Director's Cut', also

featured here alongside the original theatrical release) and focus on the characters instead, you'll be carried along by the film's compelling emotional beats.

Picture: Shot entirely on 800 ASA 35mm stock, *Donnie Darko* isn't the most visually spectacular film you'll ever see, although, as we reported last issue, for this release Arrow has undertaken an exclusive new 4K restoration with input from both Kelly and his cinematographer. More faithful colour grading than



previous home releases still doesn't alter the film's somewhat muted aesthetic, but there's a pleasing uptick in sharpness and clarity to the 2.35:1 imagery.

Audio: The DTS-HD MA 5.1 mixes for both cuts are primarily dialogue-driven, but still make frequent, well-judged use of the surrounds for atmospheric effect. However, the best feature remains the music – be it the classic tunes by Echo & the Bunnymen, INXS and Duran Duran or Michael Andrews' menacing atonal score.

Extras: As well as the two versions of the film, this two-disc set is also loaded with commentaries, featurettes, deleted scenes, trailers and galleries. Our favourites are an 85-minute retrospective *Making of...* documentary and Kelly's intriguing 1996 short film *The Goodbye Place*.

This limited edition also includes a 92-page book in its deluxe packaging, while the 'regular' Blu-ray comes with a cut-down 20-page version.



HCC VERDICT

Donnie Darko: Limited Edition

→ Arrow Video → Region B BD & R2 DVD → £28

WE SAY: Undoubtedly the definitive Blu-ray package for this 'cultiest' of modern cult movies.

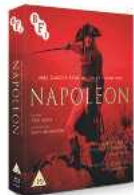
Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



Epic restoration for an epic film

Abel Gance's mammoth silent masterpiece receives a Blu-ray decades in the making

→ **NAPOLÉON**

Following the critical and commercial success of his films *J'accuse!* (1919) and *La Roue* (1922), French filmmaker Abel Gance concocted an audacious plan to shoot a series of six films following the life of Napoleon Bonaparte. However, unable to drum up the funds needed to make all six, Gance was forced to stop shooting after a couple of years and instead contented himself with the creation of one epic movie culminating with Boney's invasion of Italy.

What followed was a convoluted series of trade screenings, previews and premieres, each seemingly debuting a different cut (one lasting four hours, another the best part of ten, and so on). When *Napoleon* eventually found its way to international audiences, it did so in several severely truncated and unsatisfying edits. Incredibly, the 1929 US release clocked in at just 100 minutes.

The hints of cinematic greatness these versions still teased were enough to pique the interest of film historians, leading to an ongoing search for the missing footage. The subsequent series of restorations (which started in the late '60s) resulted in 2000 with a five-and-a-half hour cut that returned *Napoleon* to the astonishing, innovative masterpiece it was always meant to be. Following additional digital restoration work, that version has now made its way to Blu-ray. Better late than never.

Picture: The end result of those decades of photochemical and digital restoration is a simply spectacular image for a 90-year-old film. The variety of sources employed in piecing *Napoleon* together results in occasional fluctuations in definition, yet the



overall stability of the image makes it feel more cohesive. Colour tinting is also wonderful.

Spread across three Blu-ray discs, it's predominantly presented in a 1.33:1 aspect ratio. However, the final 20 minutes were shot with three cameras and are now presented as a 4.00:1 Triptych of the three full-frame images side-by-side.

Audio: The BFI offers DTS-HD MA 7.1 and LPCM 2.0 presentations of Carl Davis' orchestral score. Both sound excellent, with the 7.1 mix not afraid to spread the music far and wide.

Extras: Highlights of this three-disc set include a 1968 BBC TV documentary on Gance, an audio commentary by film historian Paul Cuff that runs across all five-and-a-half hours, and inclusion of the separate left/centre/right Triptych panels across the three discs. This allows those with a trio of displays (!) and BD decks to recreate the original viewing experience in full at home. Go on, we dare you.



The BFI claims that the restoration involved scanning '16 reels of negatives totalling more than 26,000ft'

HCC VERDICT

Napoleon

→ BFI → Region B BD

→ £35

WE SAY: *Sacre bleu!* Without doubt one of the year's best and most painstaking Blu-ray releases.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

To Live and Die in L.A.

Arrow Video → Region B BD & R2 DVD → £20



A sun-drenched counterpart to *The French Connection*, director William Friedkin's stylish and sleazy '80s thriller pits William Petersen's thrill-junkie secret service agent against Willem

Dafoe's ice-cool counterfeiter. A simultaneously seductive and cynical slice of neo-noir, *To Live and Die in L.A.* hits Blu-ray with a brand-new 4K restoration of the original camera negative and the resulting 1.85:1 1080p AVC encode is nothing less than spectacular. Abundant extras include five newly-recorded interviews, archival featurettes, deleted scenes and a commentary from Friedkin.



10 Rillington Place

Indicator → All-region BD & R0 DVD → £23



Some 45 years after its original release, this 1971 true crime film about notorious British serial killer John Christie

remains a hauntingly effective piece of filmmaking, thanks largely to Richard Attenborough's creepily banal portrayal of the killer. This new UK hi-def outing is a superb showcase for the film, starting with an authentically grimy 1.66:1-framed 1080p encode (based on a recent 4K restoration) and purposefully low-key LPCM mono audio. Meanwhile, the generous array of extra features includes two chat-tracks, interviews, an isolated score and a 32-page booklet.



Hex

88 Films → Region B BD & R2 DVD → £15



Les Diaboliques gets an Asian makeover in this Shaw Brothers production from 1980. However, we're pretty

sure that the celebrated French thriller didn't end with a protracted, fully naked exorcism – which is what director Kuei Chih-Hung (of *The Killer Snakes* fame) gives us here. The first release under its new 88 Asia Collection banner, UK indie 88 Films delivers a solid Blu-ray debut for this enjoyable Chinese fright flick with a good-looking 2.35:1 Full HD transfer and handy video guides to the Shaw Brothers and the language of Asian cinema from Hong Kong film expert Bey Logan.





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Collecting...

Alien invasions!

With *Independence Day: Resurgence* again making angry extra-terrestrials fashionable, **Team HCC** digs up another ten cracking features where mankind is under threat from celestial visitors

MARS ATTACKS!

A throwback to the sci-fi films of yore, directed by Tim Burton in 1996 before he entered his ongoing Johnny Depp phase, *Mars Attacks!* rustles up a huge roster of actors (Jack Nicholson, Glenn Close, Jack Black, Tom Jones, Pierce Brosnan, Danny De Vito, Natalie Portman...) and throws them into a tongue-in-cheek alien invasion farce, doing battle with murderous CGI Martians (apparently Burton's original plan was to use stop-motion animation). Not perfect, but garish and goofy.

Get it: Warner outed *Mars Attacks!* on Blu-ray in 2010, not bothering to unearth any extra features. You do get a lossless DTS mix, though. Old-school cinephiles might want to hunt down the 1997 LaserDisc release.

Right: Pierce Brosnan looking a bit shaken and stirred by his CG cast-mates



DESTROY ALL MONSTERS

1968 *Godzilla* franchise entry in which an alien race mind-controls an army of Kaijus and persuades them to stomp all over the world's major cities. Featuring the usual awe-inspiring model work and set-piece punch-ups, this is 80-odd minutes of B-movie brilliance.

Get it: There's no UK Blu-ray release, but die-hard *Godzilla* freaks can at least import the Tokyo Shock platter from the US. DVD editions are even harder to find.



THEY LIVE

What if aliens had already successfully invaded, and we just didn't know about it? That's the premise of John Carpenter's 1988 *They Live*, which ups the fun ante by casting ex-pro wrestler 'Rowdy' Roddy Piper as the hero armed with a pair of sunglasses that enable him to see the aliens masquerading as humans.

Get it: After being released by Shout Factory! in the US in 2012, this was made available last year on UK BD by StudioCanal. AV quality is good, and the Piper/Carpenter chat-track is excellent.



THE WAR OF THE WORLDS

The first film adaptation of HG Wells' 1898 Mars invader novel didn't surface until 1953, but at least by then Hollywood had the SFX know-how to bring all those spaceships (if not the book's Tripods) to life. Shot in glorious Technicolor, it's a marvellous slice of '50s Hollywood sci-fi.

Get it: While once slated for a Blu-ray release by Paramount, that still hasn't happened, for reasons unknown. At least the Special Edition DVD is a solid package, loaded with extras.



THE FACULTY

In this smart 1998 sci-fi horror from director Robert Rodriguez and writer Kevin 'Scream' Williamson, it's an Ohio high school that's the focal point of an insidious alien plan to take over planet Earth, rather than a showy attack on the White House. Cue homages to *The Thing*, jokes about Jennifer Love Hewitt, plenty of teen angst and some wonderfully tense set-pieces that wouldn't be out of place in a slasher flick.

Get it: For *...Faculty* fans, Lionsgate's budget 2011 Blu-ray platter is all that's available.



QUATERMASS 2

The second and best feature outing for Nigel Kneale's science-hero was a deserving box office hit for Hammer. This chilling 1957 film finds Professor Quatermass (Brian Donlevy) investigating a top-secret chemical plant that bears a striking similarity to his own plans for a moonbase, only to uncover an alien conspiracy that stretches up to the highest levels of British government.

Get it: The only way to get hold of the film on Blu-ray is to import the Australian (Region B) release of *The Quatermass Xperiment*, which includes a 1080i50 version of *Quatermass 2* as a bonus feature.



PACIFIC RIM

Another movie chock-full of Kaijus, only this time crafted by Hollywood hit-maker Guillermo del Toro and employing dizzying CGI to paint exquisite scenes of mass destruction. There's a plot in here somewhere about aliens using these lumbering beasts as a kind of advance attack, but you'll be so caught up in the onscreen Mecha v Kaiju action to make head nor tail of it.

Get it: The 2D Blu-ray release is brilliant, as is its 3D counterpart, while the more recent Ultra HD version adds a Dolby Atmos soundmix and impressive HDR grading to the party.



INVASION OF THE BODY SNATCHERS

Philip Kaufman's 1978 remake of the 1956 sci-fi flick about an invasion by alien pod people replaces the Cold War parallels of the original with a more resonant critique of pop psychology and the dehumanising effect of modern city life. The result is startling and disturbing, and it will leave you wondering who in your life may be a pod person...

Get it: Arrow Video's superb 2013 UK BD partners its excellent 1080p image with a host of bonus goodies, including a chat-track and panel discussion about the ...*Body Snatchers* films.



DALEKS: INVASION EARTH 2150 AD

Peter Cushing reprises his role as the bigscreen Time Lord in this Dalek sequel, where the wheely-bin baddies have taken control of London in the year 2150. Yes, it features Bernard Cribbins as a comic sidekick, but that doesn't stop this widescreen, colour adventure coming across as ambitious and a little sinister.

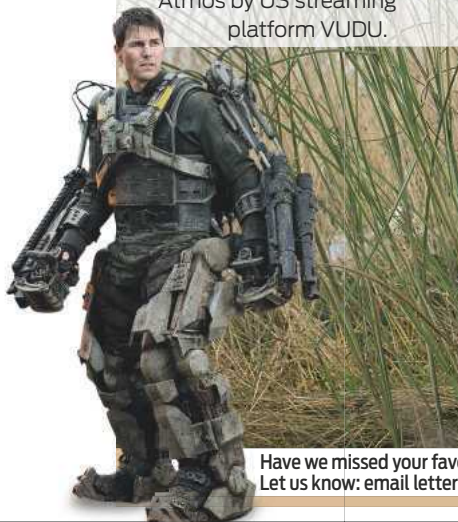
Get it: A 2013 Blu-ray release, as part of the 50th anniversary *Doctor Who* celebrations, features a sympathetic HD restoration (which leaves film grain unmolested) and some engaging bonus bits.

EDGE OF TOMORROW

An SFX-heavy, blackly comic futuristic actioner starring Tom Cruise and Emily Blunt, this deserves more love than it got from audiences in the Summer of 2014. Reimagining the beach battle sequences of *Saving Private Ryan* with alien forces, having Tom Cruise suffer a litany of gruesome deaths, a head-twisting plot... It's all here. We'd happily watch a sequel.

Get it: The Blu-ray release offers super-sharp visuals and a superb DTS-HD MA 7.1 track. The only annoyance is that Warner hasn't added it to its UHD slate, although it is offered in 4K/Dolby Atmos by US streaming platform VUDU.

TOP PICK



Have we missed your favourite alien invasion film?
Let us know: email letters@homecinemachoice.com

Ultra HD haven

Formerly a garage-turned-family room, this smart home cinema conversion sports a 4K projection system, 7.1.4 speaker array, back-room bar area and a collection of legacy games consoles. HCC reader **Stephen** invites you to step into his pride and joy



A 120in fixed screen from Elite Screens dominates the front wall



Welcome to the AV-Holics Hall of Fame! Introduce yourself...

Hi, my name is Stephen Miles. I am 41 years old

and work as a technology director.

How long have you been into home cinema, and what was the first setup you had?

I've been a fan for a long time, and as far back as I can remember I have always had a stereo system of some kind connected to my TV. My first surround setup came in around 2002 after visiting a friend (Dan Peck) and hearing how awesome a proper setup could be.

I had a 42in Panasonic flatscreen TV (a 720p model) so started to hunt around on eBay for an amp and some speakers. I managed to pick up a Denon AVR-3803, a pair of KEF Coda 9s for my front speakers

and a KEF Coda 80 for the centre channel. I reused a pair of Denon SC-M50s from my CD player as the rears. All in I spent about £150 and it sounded so much better than my previous stereo system. Since then I have been adding and upgrading components as I find good deals or new technology comes out.

When and why did you decide to build this new cinema room?

In our previous home I never had the space to build a dedicated cinema; my lounge was the best I could manage and really wasn't suitable to have a projector installation. Volume was also a problem as we lived in a semi-detached house. In 2012 I was forced to move home due to work and I was adamant that the house we bought had to have a suitable space for me to build my cinema room. My wife didn't agree and I'd turned down several houses that she really liked along the way! We managed to find somewhere where the previous owners had converted the double garage to a family room/study that

The lighting scheme includes Philips Hue LED strips



looked perfect to me as the basis for my dedicated theatre.

It looks like a major transformation! How long did it take and did you get help?

In the years since we moved house I drew up my own plans and developed my ideas for what I wanted to build, and in January this year I decided to get things moving. A close friend of mine runs a small building firm

so I gave him a call to help with the building work. We went through the designs and agreed a price. Work started on May 16th and took just over a week to complete. I set myself a budget of £20,000 for both building works and equipment.

Did you stick to the budget?

Only just! The final cost was £19,662.95.

Talk us through the hardware...

The speaker system is a 7.1.4 configuration, with a Denon AVR-X6200W as the main amplifier. I wanted to take advantage of Dolby Atmos and 4K but this receiver only has nine power amps so I have my older Denon AVR-3803 to run the additional two speakers (rear high-left and rear high-right).

'I love the overall experience. Big screen, surround sound... I've been in there every day since it was built'

The front L/R speakers are KEF IQ7s, the centre is a KEF Q600C. The surrounds and rears are also KEF IQ models (IQ5s and IQ3s respectively). The four ceiling speakers are KEF Ci160CSs, and the subwoofer is a BK Electronics P12-300SB. All speakers are connected with Van Den Hul's The Clearwater speaker cable, terminated with 24-carat gold-plated banana plugs.

On the video side I'm using a Sony VPL-VW320ES 4K/Ultra HD projector. I went for a 120in fixed screen from Elite Screens.

To deliver content I have an Nvidia Shield for Plex and Netflix, etc, a Panasonic UB900 UHD Blu-ray player, plus a Sky+HD box for TV. For gaming my main consoles are the PS4, Xbox One and Nintendo Wii U. I also have a collection of consoles but these are only connected up when I want to play them, otherwise they are just on display – PlayStation, PS2, PS3, Xbox, Xbox 360, Commodore 64, Commodore Amiga, Atari 2600 (the 'Woody'), Nintendo Game Cube, Nintendo 64 and Nintendo Wii!

I also have a second system in my lounge using the Zone 2 output. This feeds an Onkyo TX-NR808 and a Samsung UE65HU8500 TV.

How often do you use the room?

I have been in there every day since it was built. It's a great way to unwind after a long day at work. I love the overall experience, the big screen, the picture quality, the surround sound.

We like the lighting...

Thanks. This is delivered from a pair of Philips Hue LED strips for uplighting and another under the bar at the rear of the room so I can grab a drink without bringing the main lights up. Spotlights provide downlighting – I would like to upgrade these to the Philips Hue GU10s.

What's your impression of the system and Ultra HD Blu-ray?

I'm very pleased with the overall results. In fact it's exceeded my expectations and experiencing Atmos for the first time has to be one of my highlights. With a 4K projector and compatible amp I couldn't not go for the UHD player and I wasn't disappointed – the Panasonic looks stunning and also makes a pretty good CD spinner, too.



Turning the previous family space into an Atmos-equipped cinema involved new ceiling and wall work. A professional building firm was used



Our AV-Holic planned his impressive kit storage/in-wall speaker housing from the beginning. Here, it's all starting to take shape

What's your favourite bit of kit?

That's a tough one. I think it has to be the projector. I thought the Sony would be out of my price range given it was a quarter of my budget but I couldn't resist. I had to compromise on the seating to afford it.

What's next on your kit list?

I want to upgrade my fronts to KEF Q900s. And I'm also considering a second sub.

Lastly, what do friends and family think of the cinema?

I love the reactions from my friends when they walk in for the first time. The family love it as well. Neither my wife or children were convinced while I was building it, but they are in there just as much as I am now! ■



Stephen wanted recliner seats, but opted to save cash with this sofa



At the room's rear is a bar/seating area



In for the long haul

Carl Hughes has spent three years working on this sleek home cinema – now he's enjoying the Full HD visuals and Dolby Atmos audio. Especially the latter...

Introduce yourself!

Hi, I'm Carl Hughes, 43, and I run my own bespoke carpentry, joinery, cabinet-making and fitted furniture business.

How long have you been into home cinema and what was the first setup you had?

I've been into home cinema for around eight years now, but I have been into audio since I was about 10. The first AV setup I had was a £100 projector and a budget DVD player.

What inspired you to build your current cinema room?

I got going on the home theatre because I thought that it would be a great hobby to get involved with, and I absolutely love television, Blu-rays and audio.

The great thing about home cinema is that there are always new products being released, so you can always add new technology or add

Blu-rays to your collection. You can never get bored with this particular hobby as it is constantly changing!

What kit do you have in the system now?

For video I'm using a Panasonic PT-AT6000E projector, plus a Sony BDP-S7200 multiregion Blu-ray player and Sky+HD 2TB PVR.

On the audio side I have a Pioneer SC-LX88 receiver (soon to be updated to the Pioneer SC-LX89) and a Bowers & Wilkins speaker system – five M-1 surround speakers, a PVID subwoofer and four CCM682 in-ceiling speakers. Kit is housed in a 12U 19in rack unit from Pro Audio Stash, with a Coolrac FT01-Q fan (also from Pro Audio Stash) keeping everything cool and ventilated.

Whereabouts in your house is the cinema?

The room was once my children's playroom

but when I carried out some alterations to the house three years ago I gained another room to the property which is now the current playroom, so this space could be turned into my movie den.

It's situated more or less in the centre of the house and there are four other rooms around it, which is great because this helps to contain the sound.

How long did the project take?

Around three years. I have carried out all the work myself in my spare time – I don't get a lot of spare time and this is why it has taken a while to build! However, when you really love something, as long as you know that you are adding to your dream that is all that counts.

What was the hardest part of the build?

Being honest, I didn't find anything difficult in the slightest within the complete build. For



instance, the Bowers & Wilkins CCM682 ceiling speakers were lovely to install as they came complete with a special cradle that has to be installed into the ceiling first, allowing the speakers to be removed 'quick release'. This is a brilliant idea, especially if you ever need to remove the speakers or carry out any service work. Actually, all the Bowers & Wilkins speakers were a real pleasure to install.

What do you love the most about having a dedicated cinema room?

The fact that I can experience Dolby Atmos in my own home any time that I choose to. I really love Dolby Atmos! It's by far the best cinema sound experience you can possibly imagine.

You've got a 5.1.4 Atmos array. Was it easy to get it set up?

I didn't find it tricky. I have fully calibrated my system, and you can tailor it if you feel that the Dolby Atmos sound is low coming out of the ceiling speakers, or in my case if you have high ceilings. So in other words, you can increase the level on any of the ceiling speakers to suit yourself. It was extremely easy to install, but I would strongly recommend that good ceiling

speakers are also chosen so that when you are fully immersed in the overhead sound with an Atmos soundtrack you aren't distracted by distortion, etc.

Roughly how much have you spent on the room?

The whole build in total has cost £20,000, including the seating.

Where's the seating from?

It came from DFS. The seating is modular, which is very handy if you need to move it around for cables, etc. The small storage footstools are cool because you can lift up the seat and store Blu-rays or remotes in them. Most importantly, the seating is extremely comfortable.

What's your fave bit of kit?

I don't have a favourite bit of kit, really, because I love the complete setup. So I'd just have to say Dolby Atmos, because it sounds amazing in my room.

What's next on your kit list?

After the Pioneer AV receiver I'm interested in a 4K projector.

Above: Carl's PJ fires directly onto his painted wall
Below: A quartet of B&W CCM682 in-ceiling speakers provide Atmos highs



You're using a painted wall to project. Have you considered getting a dedicated screen?

I decided against a screen. When I watch TV or a Blu-ray on my wall it looks so clear. I also didn't like the idea of having one around on a permanent basis when it's not required.

Lastly, what are your favourite movies?

Any 3D Blu-ray with Dolby Atmos. It's a truly amazing experience. I also love the IMAX 3D demo discs ■

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Ready to roll

HCC reader **Jeff** wanted the highs of home cinema but living in rented accommodation meant some ideas were a no-go. This affordable DIY twin-screen setup can be easily disassembled when the time comes to move on to bigger and better things



Welcome to the AV-Holics Hall of Fame! Introduce yourself...

Hi, my name is Jeff. I live in Australia, and I'm 39 years old.

How long have you been into home cinema – and what was the first setup you had?

For about 15 years. My first serious setup was an enormous (well it was back then!) 44in Panasonic plasma. I ran audio through my hi-fi gear into two Rogers LS6 speakers. I loved that setup for a long time, until I actually sat

in a retailer's demo room and experienced 5.1 for the first time...

What's in your system now?

I have a dual-screen setup. The TV is a 60in Panasonic, while a BenQ W1200 projector sends pictures to a drop-down 100in screen. For audio, I have a Pioneer VSX-1021 AVR and a 5.1-channel DALI Concept speaker array. Sources are my Panasonic DMP-BDT320 Blu-ray player, a Toshiba DVD deck (multi-region) and a Sony PlayStation 4.

How would you rate the performance of your setup?

It performs as well as I could expect for the budget I set. We live in rented accommodation

at the moment, so I was conscious of maximising the best performance and not being tempted to over-spend on any single piece of kit. Being in a rental means I cannot alter the fabric of the building to house a top-notch projector and sound system.

For instance, the room is very bright with white walls and cannot be altered, so I chose the BenQ DLP projector that's rated at 1,800 Lumens brightness.

It's the same with the speaker/amplifier combination. I needed the best possible sound quality for the cost and its flexibility in a temporary setup. I have my eye on a Jamo D600 THX speaker package, but it would be pointless to place that in anything other than a dedicated room.

Roughly how much have you spent on your system?

Including all the AV equipment and the soft furnishings, I would say \$7,400. The actual unit housing the screen, and the AV unit, I made myself. Of course, I am a self-employed custom furniture maker, but what I have created can be achieved by anyone with a few basic power tools and some common sense. The frame for the screen is modular, so it can be taken apart and re-built when we move.

One thing I have never seen in HCC is a temporary home cinema setup. For us, setting

'We have been able to put together an awesome AV experience and keep the landlord happy!'

up a permanent installation is off the cards. With a little ingenuity, we have been able to put together an awesome AV experience, while also keeping the landlord happy!

What's your favourite bit of kit?

I love the BenQ projector. I bought it at a great price, and got the 100in pull-down projector screen included in the cost. The picture quality is fantastic for the money. Yes, it struggles at times with its contrast in dark scenes, but it more than makes up for this in the brightness and clarity of its image.

What's next on your kit list?

I'll wait until we move, but top of the list is a JVC projector, followed by the aforementioned Jamo speakers, and a new AV amplifier.

What do friends and family think of the cinema room?

Seeing their face when they sit back, immersed in the surround sounds with a massive picture

in front of them... they clearly love it! Most people are amazed at what you can achieve for not much money. A friend spent \$5,000 on a 65in TV and reckons he made a mistake.

What discs do you use to show off the system?

The Tyrannosaurus Rex sequence from *Jurassic Park* is a fantastic experience for newbies. It fills the screen entirely, and its multichannel sonics are still some of the best out there.

Gravity, as well, has people wide-mouthed. And the vault heist scene in *Fast & Furious 5* always makes people smile!

What are your favourite films?

I love my *Star Wars* Blu-ray boxset. I also love Christopher Nolan's *Inception*. Meanwhile, my wife loves the Marvel movies: *Captain America: The Winter Soldier* is a fave.

How often do you use the projector and screen, as opposed to sticking with the Panasonic TV?

We have movie nights every Friday and Saturday. And during the week we would use the bigscreen to watch boxsets – at the moment we are watching *The Blacklist* and *Twin Peaks*. I will throw on the PlayStation every now and again. The TV gets the normal use you would expect. We are both not that into 3D but have several discs we watch on the Panasonic.

Are you using multiple remotes or have you got a universal controller?

My wife longs for the day of a single controller for all the kit! However, since I do all the setting up and am not that bothered by multiple handsets, we just stick with the ones supplied.

Once we get our own place and build a more dedicated room, then yes, I will invest in an automation controller for the equipment and lights.



Above: Jeff constructed his own modular surround for his 100in projector screen, so it can be easily removed



The 60in Panasonic caters for 3D and everyday TV

Are you excited by 4K and Dolby Atmos/DTS:X?

I haven't seen 4K on a projection system, and its price is still too much for me to be allowed to consider it. I am very excited by Atmos though. Not sure how I would run it with the Jamo system I have my eye on, but I do feel hardware makers are having a laugh with their prices. I've seen the new Klipsch RP-280FA Atmos speakers, they are more than twice the price of their RP-280F speakers! Crazy! ■

Lastly, what do you love about having a dedicated cinema?

It is a passion that myself and my wife enjoy equally. We absolutely love being able to watch our favourite films in a relaxing way ■

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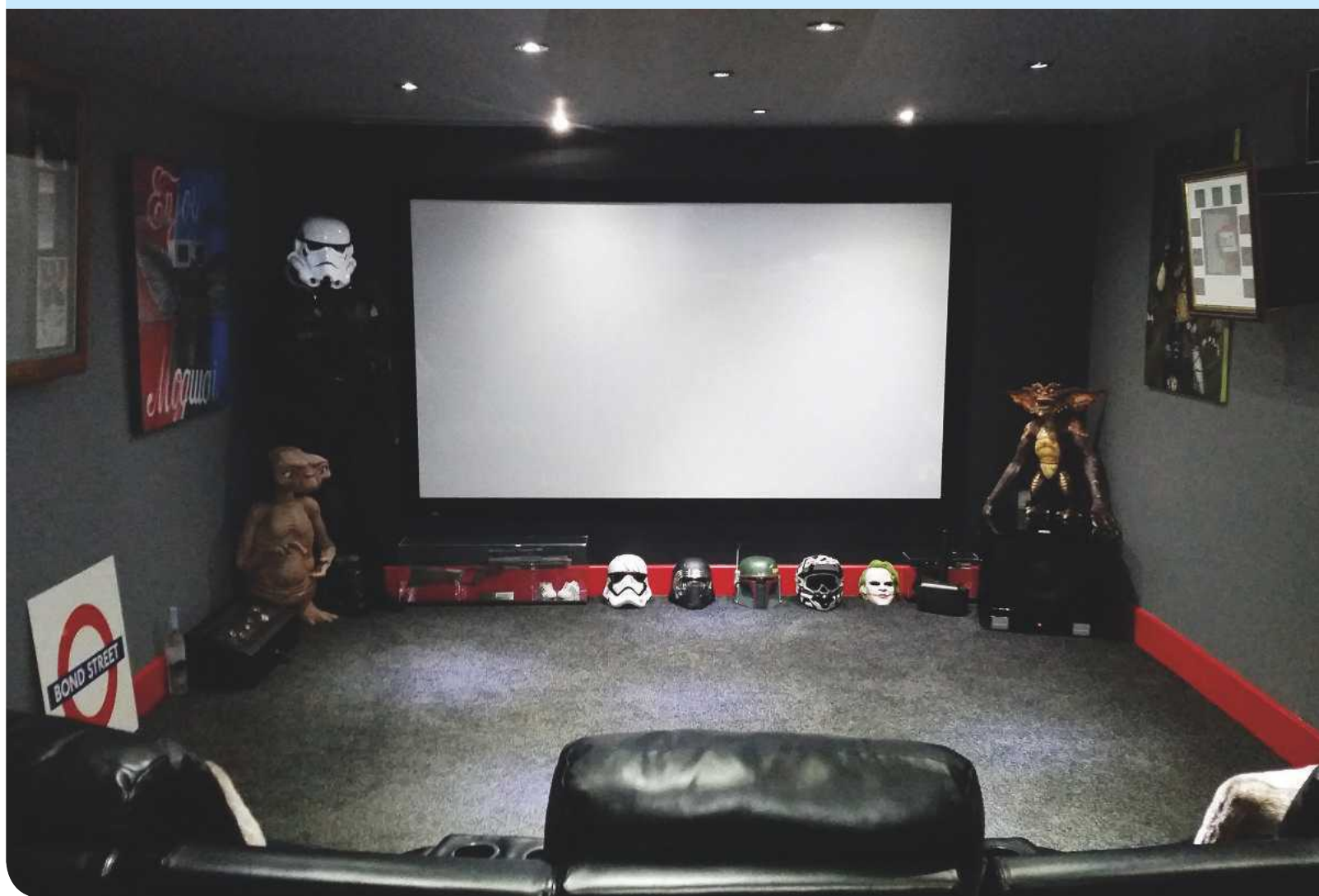
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Photo courtesy of Gary J.Fernandez Limited



Memorabilia man

Leigh has used an extension on his house to accommodate his home cinema needs. High-end audio separates, 100in projector screen and a plethora of movie memorabilia make this a room we'd love to kick back in

Welcome to the AV-Holics Hall of Fame! Introduce yourself...

Hi, my name is Leigh. I'm 43 years old and – when I'm not watching movies – I work as a plumber.

How long have you been into home cinema – and what was the first setup you had?

I have been into AV for about 25 years or so now. One of my first systems was a Panasonic S-VHS video deck connected to a 29in Sony TV.

So what hardware is in your current system?

My room is projection-based. The screen

is a Draper Onyx 100in fixed-frame model with acoustically transparent material. The projector is a JVC DLA-X3.

For the audio I've gone for separates. I have two power amplifiers, both from ADA [Audio Design Associates]. One is the six-channel PTM-6150, which is rated at 150W-per-channel. Then there's an ADA PF-2502, which is a two-channel, 200W-per-channel amp. These are partnered with a nine-channel Onkyo PR-SC5509 processor. The speakers are all from Bowers & Wilkins. I have the wall-mountable CT7.3 LCR enclosures for all channels – each of them has twin 8in bass drivers. And for LFE I have a REL G1 subwoofer.

Sources for the cinema room are my Marantz UD9004 Blu-ray player and Xbox

One. And a Logitech Harmony remote is used to control it all.

What do you love the most about having a dedicated cinema room?

I love the fact that I can go into my movie room at the end of a stressful day, crank up the volume and unwind watching films and listening to music.

The whole family enjoys film nights more now in the comfort of our home rather than going out to the cinema.

How would you rate the performance of your system?

I think my system is as good as the local

cinema, if not better, due to it being small and compact with the components I have in it. The ADA amps really kick out a lot of power and clarity, making my Bowers & Wilkins speakers work really well as they are power-hungry.

Roughly how much have you spent on the system?

I spent about £12,000 on the initial build. The kit costs roughly between £35,000-£45,000. This does not include the money I've spent on my Blu-ray/DVD collection.

Whereabouts in your house is the room?

The theatre is off of the kitchen on a side extension, which has the same footprint of the house, around 4.5m x 8m.

Where did you get the seating?

I purchased the cinema chairs online. Managed to get the last set at a bargain price of £1,200 including delivery.

That's quite a disc shelf! How many films have you got on DVD/Blu-ray?

I own roughly 650 Blu-rays and about 200 DVDs. I normally get a couple of discs every other week.

What's your fave bit of kit?

It's a tough call between the Marantz Blu-ray player and my trusty 12in REL G1 sub.

What's next on your wishlist?

The next upgrade would be a new projector. The JVC DLA-X3 I have is awesome but I'm always looking for a better image.

What do friends and family think of the cinema room?

Everyone loves the room, especially when football or boxing is on as it turns into a really good, social evening.

What discs do you use to show off the room?

Gravity sounds amazing through my system, as do most other films, actually. All the *Transformers* movies are good demo discs.

What are your favourite films?

I don't think I could choose just one film as my favourite.

I like the Marvel and *Star Wars* movies, which is useful as my 10-year-old son likes to repeatedly watch these!

What's your most prized piece of movie memorabilia?

It's got to be one of my *Star Wars* pieces. Maybe the Hans Solo in carbonite.

Are you excited by 4K and Dolby Atmos/DTS:X?

Yes! 4K is the next step up for me. Just holding out for more content before I buy a player. As for Dolby Atmos, although it sounds amazing I think it will be a few years before I upgrade. I'm really happy with my speaker system as it is now ■



Twin ADA power amps drive the room's seven-channel speaker system in conjunction with an Onkyo processor

Leigh is using a JVC DLA-X3 projector, but has his eye on an upgrade



Share your system in the mag!

If you want to be in **HCC**, you'll need to send us some hi-res images of your cinema room. Here are a few tips for great-looking pictures:

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch

- movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.
4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.



5. Don't be shy. Send a picture of yourself!
6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup – including a full kit list – and we'll then be in touch.



AV Avenger

So what is the most over-hyped AV technology of 2016? **Steve May** opens the golden envelope and reveals the answer...

THE BALLOT'S BEEN held, votes counted and verified. I can now reveal the most over-hyped, over-sold technology of 2016 is... HDR!

Virtual Reality may have been the bookie's favourite, but High Dynamic Range wins by a landslide. It is officially* the most over-egged display tech since 3D (*not officially).

Touted as the future of TV by some, HDR ends the year all over the place. From the get-go, it sucked as a user experience. The very idea that TV owners have to manually assign the HDMI inputs of their TVs to make them compatible with HDR sources is ridiculous. It hardly helps that manufacturers can't agree on any common parlance to make life simpler for early adopters trying to set up their sets – who knows that Enhanced HDMI on a Sony equals UHD Colour on a Samsung?

And unless you aim high, not all the inputs on your new 4K HDR TV will even be HDR-compatible. HDMI 1 doesn't work, but HDMI 4 does? Small wonder so many have had issues with HDR sources – be they 4K Blu-ray players or consoles like the Xbox One S and PS4 Pro. Even HDR's biggest advocates will admit that basic hookup is a mess.

Luminosity lunacy

But I have more fundamental issues with HDR. Pundits will rightly point out that it represents a more obvious step change in picture quality than extra resolution. Those spectral highlights can really zing. But what we've seen to date is an often disappointingly crass use of peak luminosity – the visual equivalent of having the volume of your surround speakers too loud. And depending on your display, that volume can be really deafening.

The beauty of 4K is finer detail and greater pixel density. It's subtle. Great 2160p images have an

almost three-dimensional sense of depth. But to appreciate this you need to sit close to your TV (certainly closer than with a 1080p panel) or buy a much bigger screen size. But enlarge your experience to appreciate that extra clarity, using an HDR screen designed for maximum peak brightness (1,000 nits plus), and viewing can become uncomfortable. I challenge anyone to spend more than two hours up-close-and-personal with *San Andreas* on 4K Blu-ray and not want to retreat to a dark room to recover.

So how do you optimise your viewing room for the best detail perception and comfortable peak brightness? Finding a happy medium between the two isn't always going to be practical.

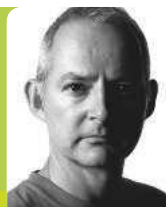
Implementations of HDR also vary dramatically. The best of 2016's sets – Sony's ZD9, Panasonic's DX902 and LG's E6 OLED – all look quite different. **In all probability, what's best for you isn't going to be down to a measure of nits.** For many, OLED probably delivers the best balance between viewing comfort, resolution and HDR – but the numbers make it look second best.

HDR LED screens will get even brighter in 2017. Samsung will attempt to out-glow all at CES, and Sony will update its Backlight Master Drive in an attempt to rival the Vegas strip for sheer garishness. If you want to appreciate the benefits of 4K resolution in 2017, prepare to have your retinas singed. And we haven't even got to broadcast HDR yet, where Hybrid Log Gamma will complicate the entire screen market because it will allow users to tailor image quality based on ambient room lighting.

So take a bow HDR, my most over-hyped tech of the year. Now where's that copy of *The Shining*? ■

*Have you upgraded to HDR? What's your verdict?
Let us know: email letters@homecinemachoice.com*

Steve May is going to seal his 4K *San Andreas* disc in concrete and dump it in the North Sea for the sake of the eye-sight of future generations





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